

**The Development and Validation of a New Instrument to Assess the Role  
of Social Media in College Adjustment for Undergraduate Students**

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## **Abstract**

Undergraduate university and college students are increasingly using social media to overcome college adjustment challenges such as creating social networks, maintaining old friendships and confronting academic pressures. Areas that remain unexplored in the college adjustment literature comprise of contemporary views of how college adjustment challenges have changed since the pre-social media era, and consequently the influence of personality on these challenges. Moreover, most college adjustment research has not taken diverse social media sites into consideration, such as WhatsApp, Snapchat and Instagram. The current research addresses these issues as well as the dearth of appropriate measures to gauge the role of social media in contemporary college adjustment. Using existing offline adjustment scales such as the Student Adaptation to College Questionnaire (Baker & Siryk, 1989) and the College Adjustment Test (Pennebaker et al., 1990), the current work follows recommendations for the development of the Student Adjustment Scale to assess the role of social media as a facet of college adjustment for undergraduate students (Feldt et al., 2011a; Taylor & Pastor, 2005).

The first study employs a thematic analysis of student group interviews and identifies five overarching themes associated with contemporary college adjustment issues. The second study involves devising a set of items, based on the five overarching themes, for the Student Adjustment Scale by using a principal components analysis (PCA). This results in a reliable scale with six distinct components. The third study involves a confirmatory factor analysis (CFA) but returns to an exploratory factor analysis (EFA) to further reduce the dimensions of the scale to five factors. The final study explores personality and

student adjustment. Data analysis reveals that facets of the Student Adjustment Scale are predicted by personality variables where those who have a baseline of emotional stability will more likely adjust to college. Differences in data patterns across studies suggest that college adjustment may be considered both state and trait based.

The overall findings illustrate that college adjustment is best considered a multi-faceted construct. Social media use is a facet of the Student Adjustment Scale but can be a distraction from time management and academic endeavours. The current work illustrates the complexity and multi-facets of college adjustment for undergraduate students in a social media era, which was previously unexplored in the context of scale development and personality. To conclude, some practical recommendations are suggested for faculty and student experience teams.

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## **Glossary of Terms**

### **College Adjustment Scales**

CAQ	College Adaptation Questionnaire (Crombag, 1968)
CAS	College Adjustment Scales (Anton & Reid, 1991)
CAT	College Adjustment Test (Pennebaker et al., 1990)
CLTA	College Life Task Assessment Instrument (Brower, 1994)
CSEQ	College Student Experiences Questionnaire (Pace, 1984, 1990)
INCA	Inventory of New College Student Adjustment (Watson & Lenz, 2018)
SACQ	Student Adaptation to College Questionnaire (Baker & Siryk, 1989)
SIQ	Student Involvement Questionnaire (Pascarella & Terenzini, 1980)
USDI	University Student Depression Inventory (Khawaja & Brydon, 2006)

### **Social Media Measurement Scales**

FBI	Facebook Intensity Scale (Ellison et al., 2007)
FBRMB	The Facebook Relationship Maintenance Behaviours Scale (Ellison et al., 2014)
ISCS	Internet Social Capital Scale (Williams, 2006)
ISSNU	The Impact of Student's Social Network Use Scale (Topaloglu et al., 2016)
MTUAS	The Media & Technology Usage & Attitudes Scale (Rosen et al., 2013)
PSAFU	The Psycho-Social Aspects of Facebook Use (Bodroža & Jovanović, 2016)

SMUIS	The Social Media Use Integration Scale (Jenkins-Guarnieri et al., 2013)
SNSUN	The Social Networking Sites Usage and Needs Scale (Ali et al., 2020)
SONTUS	Social Networking Time Usage Scale (Olufadi, 2016)

### **Statistical Techniques**

CFA	Confirmatory Factor Analysis
CMC	Computer Mediated Communication
EFA	Exploratory Factor Analysis
FA	Factor Analysis
PCA	Principal Components Analysis

### **Theory**

CMC	Computer mediated communication
FoMO	Fear of Missing Out
U&G	Uses and Gratifications Theory (Katz et al., 1974)

## **Chapter 1: Introduction to the Thesis**

This thesis focuses on developing and validating a new instrument that assesses the role of social media on college adjustment.

College adjustment can take place during a transition period that students experience when they start college or university (Baker & Siryk, 1984, 1986). The transition to college brings with it numerous experiences that go beyond academic challenges such as establishing a new social network, navigating new environments (both online and face to face), developing interpersonal skills and establishing oneself as part of the overall college community through affiliations to the college (Credé & Niehorster, 2012). In addition, college adjustment can be pertinent in various years across courses, not just during the first year, where college adjustment can affect well-being and predict attrition from courses (Baker & Siryk, 1986; Hurtado et al., 1996; Manago, 2012; Taylor & Pastor, 2005). College adjustment itself, is an area that is defined as a multi-faceted construct that includes academic, social, personal-emotional adjustment and institute attachment (Baker & Siryk, 1984, 1986). Students can be adjusted in all, some or none of the facets of college adjustment and as such, each of the factors are known to affect overall college adjustment.

### **1.1 Background**

#### **1.1.1 Terminology**

##### **1.1.1.1 College adjustment terminology.**

Early college adjustment literature originates in American studies (Baker & Siryk, 1989; Borow, 1945; Crombag, 1968; Pennebaker et al., 1990), where the term 'college' is generally defined as institutes, including universities, that offer

undergraduate education in a broad range of academic areas (USA Gov, n.d.). Whereas in the UK, 'college', 'further education', 'higher education' and 'university' falls under the general term 'higher education institutes' (UCAS, n.d.). In Ireland, the collective term for universities, technological sector (technological universities and institutes of technology) and colleges of education, is 'third level education' (Citizens Information, n.d.). In order to maintain consistency with the original college adjustment literature, throughout this thesis, the term 'college' will refer to higher education institutes and third level education in the UK and Ireland.

#### **1.1.1.2 Undergraduate students.**

For the purpose of this thesis, a 'student' is defined as a person who is currently studying in an undergraduate academic course in both the UK and Ireland, regardless of their attendance at previous institutions or courses. For example, a 'first year student' refers to students who have commenced their first year of university or college in their current course. Throughout this thesis, the term 'student' will refer to both emerging adults and mature students currently attending undergraduate courses (Arnett, 2000; Schuh et al., 2015).

#### **1.1.2 College adjustment and social media**

There are many college adjustment scales, most of which were developed pre-social media era and do not take current student behaviour into consideration (Brower, 1994; Crombag, 1968; Pace, 1984; Pascarella & Terenzini, 1980; Pennebaker et al., 1990). There are two recent college adjustment scales that address college adjustment issues but do not consider the role of social media on college adjustment (O'Donnell et al., 2018; Watson & Lenz, 2018). Not all college adjustment scales produce an overall scale score



(O'Donnell et al., 2018; Watson & Lenz, 2018), similar to constructs such as personality where there is no overall personality score. In addition, reports of college adjustment scale development and validation in literature is inconsistent. The most widely used college adjustment scale is the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989) which was developed pre-social media era. It measures levels of satisfaction in relation to four factors: academic adjustment, social adjustment, personal-emotional adjustment and institute attachment. All factors consider how levels of adjustment convert into levels of satisfaction with the new college environment (Baker, 2002), and are broken down as follows:

- 'Academic adjustment' considers the conversion of motivation, engagement and effort into academic success, it also considers how levels of academic success converts into levels of satisfaction with a new academic environment (Baker & Siryk, 1986; Baker, 2002).
- 'Social adjustment' is concerned with engagement in social activities, establishing social connections, living arrangements, maintaining relationships with people from home, such as old friends and family members, and general satisfaction with a new social environment (Baker & Siryk, 1986; Baker, 2002).
- 'Personal-emotional adjustment' is concerned with levels of satisfaction regarding psychological and physical well-being.
- 'Institute attachment' or commitment to the college is concerned with levels of overall satisfaction regarding inclusion and

satisfaction with the institution itself (Baker & Siryk, 1986; Baker, 2002).

Overall college adjustment is concerned with all four facets where students can be adjusted in one area but not in another. Each facet of college adjustment is measured independently but forms part of the overall college adjustment score (Baker & Siryk, 1986).

In recent years, college adjustment research suggests that social media has a role to play in adjustment to college (Alshuaibi et al., 2018; DeAndrea et al., 2012; Gray et al., 2013; Lin et al., 2011; Subrahmanyam et al., 2008; Yang & Lee, 2018). Due to the fast-paced development and consumption of social media platforms by students, this area of research is growing rapidly where multiple social media platforms are used by students (Yang & Lee, 2018). Social media is a prevalent part of college adjustment and society for undergraduate students, yet as recently as twenty years ago, it was not widely adopted possibly due to accessibility issues that surrounded technology at the time. Around 2002, Friendster was one of the first social media platforms that allowed users to set up profiles and add connections to their networks, Myspace quickly competed against Friendster in 2003, subsequently both were overtaken by Facebook in 2004, when it became available to the general public (McIntyre, 2014). Since then, globally there has been an increase in active users per month where Facebook boasts the highest number of active users, but steadily followed by other social media platforms such as Snapchat, Discord, and TikTok (Statista, 2020). Each social media platform offers specific features such as images, videos, text, broadcast messaging and private interactions. Student's use of social media is driven not only by the affordances of these

sites, but also the human need to maintain friendships (Ellison et al., 2007, 2011; Ellison et al., 2014), or establish new friendships (McKenna & Green, 2002; Yang & Lee, 2018) and to address the innate human need to belong and to establish a social identity with peers (Baumeister & Leary, 1995; Tajfel & Turner, 1979).

Research tends to use a range of different social media measurements in addition to college adjustment scales, to measure the use of social media whilst adjusting to college (Alshuaibi et al., 2018; DeAndrea et al., 2012; Gray et al., 2013; Lin et al., 2011; Subrahmanyam et al., 2008). Findings from this research are generally mixed, furthermore most of the research is based on Facebook use rather than current social media platforms such as WhatsApp, Instagram, TikTok, Discord and Snapchat (Amichai-Hamburger & Vinitzky, 2010; Ellison et al., 2007; Ellison et al., 2014; Ross et al., 2009). Despite research indicating the importance of social media use in college adjustment, current college adjustment scales do not consider students' social media use. Furthermore, research in the area suggests that personality has a part to play in both social media use (Amichai-Hamburger & Vinitzky, 2010; Ross et al., 2009) and college adjustment (Credé & Niehorster, 2012).

### ***1.1.3 Psychological states and traits***

There are psychological aspects that may impact college adjustment such as individual differences and states. According to Credé and Niehorster (2012), the college adjustment literature is categorised into two approaches, one which considers previous mental health issues which includes states such as well-being, depression, and other mental health issues which have been documented in research. These are considered in the development of some

college adjustment scales such as the College Maladjustment Scale MMPI-2 (mt) (Kleinmuntz, 1960), the Inventory of College Adjustment Scales (CAS; Anton & Reid, 1991) and the University Student Depression Inventory (USDI; Khawaja & Brydon, 2006). The second approach to college adjustment research considers only issues that arise due to college adjustment (Baker & Siryk, 1984, 1986, 1989; Pennebaker et al., 1990), the latter approach will be reviewed and discussed in this thesis.

Individual differences have been acknowledged in research as a potential influence on college adjustment (Credé & Niehorster, 2012) but there is limited research on the combination of college adjustment, social media use and personality, which is why these factors form the core consideration of this thesis. Currently there is a wide range of social media use measurements available. However, some are used only for the study at hand and validity concerns have been raised about others (Sigerson & Cheng, 2018). This research will therefore explore current issues in college adjustment that have been recently experienced by students, with regard to social media use and other relevant issues. This will be achieved by examining the role of social media and personality on college adjustment by developing a new college adjustment scale based on current issues.

## **1.2 Rationale for thesis**

The aim of this thesis is, as outlined, to develop a new college adjustment instrument which will be validated to determine convergent validity with an existing college adjustment scale. In addition, the impact of personality on college adjustment and social media use will be explored using an established personality instrument.

The gap in literature regarding combining social media and college adjustment scales into a single scale, could be attributed to the use of outdated scales that were developed in the 1980s and 1990s and do not include online aspects of college adjustment (Baker & Siryk, 1989; Pennebaker et al., 1990). In addition, there is a multitude of social media usage scales that are not suitable for measuring social media use during college adjustment and furthermore pose development and validation concerns (Sigerson & Cheng, 2018). Research suggests that social media use can affect different aspects of college adjustment (DeAndrea et al., 2012; Junco & Cotton, 2010; Junco & Cotton, 2012; Whelan et al., 2020; Wohn & LaRose, 2014; Yang & Lee, 2018) but the results from these studies are mixed which could be attributed not only to the plethora of available social media usage scales, but also to the inconsistency of social media measurement in the college adjustment literature. For example, researchers tend to develop social media measurement tools for the college adjustment study at hand which were not validated or used again in research (Alshuaibi et al., 2018; Ellison et al., 2014; Lin et al., 2011).

Whilst individual differences are well documented in both college adjustment and social media use, there is very little research on the combination of all three research areas. The research that exists poses the same concerns as college adjustment and social media whereby results from the literature on personality and social media use is mixed, this could also be attributed to the range and variation of social media measurements used to determine the effect of personality on social media use (Amichai-Hamburger & Vinitzky, 2010; Gil de Zúñiga et al., 2017; Hughes et al., 2012; Ross et al., 2009; Skues et al., 2012). This research will help improve the understanding of

the effect of personality on social media use during college adjustment and determine any benefits or drawbacks of using social media in the transition to college.

### **1.2.1 *Rationale for a mixed methods research***

Epistemology is a worldview that claims more than one reality can exist and that knowledge and perceptions of the world are based on individuals' experience (Kaushik & Walsh, 2019; Kivunja & Kuyini, 2017; Schwandt, 2000; Wilig, 2013). It captures a social reality and addresses issues such as how and what can we know (Willig, 2013), whereas ontology captures the nature of being and existence. A paradigm is a model or pattern that is traditionally underpinned by a world view (Kivunja & Kuyini, 2017) and can be positivist/postpositivist, interpretivist/constructivist, critical/transformational or pragmatic.

Traditionally, qualitative studies would lie in the constructivist/interpretivist paradigm with ontological underpinnings and quantitative studies would lie in the positivist/postpositivist paradigm with epistemological underpinnings (Braun & Clarke, 2013a). Disputes between quantitative and qualitative approaches arose in the United States in the 1920s and 1930s where positivism or postpositivism guided early psychological research (Wilig, 2013). However the empirical rational philosophy of positivism and postpositivism, was not considered adequate when applied to human nature (Mertens, 2015; Wilig, 2013). The interpretivist/constructivist paradigm places emphasis on social enquiry to understand the subjective perception of human experience through observation, interviews, and interaction with participants (Kivunja & Kuyini, 2017). In both instances, researchers may adopt a purist stance and conclude that paradigms or worldviews have strict

boundaries and cannot be mixed (Creswell, 2011). The pragmatic paradigm assumes that there can be multiple realities that can be examined, it involves a combination of both qualitative and quantitative studies, and is not solely committed to one philosophical underpinning (Frey, 2018; Kivunja & Kuyini, 2017). The importance of identifying new college adjustment issues and the value of the students' experiences drives the pragmatic stance using mixed methods research taken in this study (Creswell, 2011). The initial exploration of new college adjustment issues requires a qualitative enquiry and the subsequent development and validation of the scale requires empirical investigation. Therefore a pragmatic paradigm using mixed methods research is suitable to assess the role of social media in college adjustment for undergraduate students.

Whilst it is acknowledged that both types of data are needed for a more comprehensive world view (Miles et al., 2014), there exist a number of tensions surrounding the prospect of using mixed methods research. Historically qualitative and quantitative studies are treated separately in publications instead of as an integrated set of findings (Creamer, 2018; Sparkes, 2015). Furthermore it is perceived that qualitative may take a secondary role to quantitative, where judgement criteria can be positivist, for example measuring trustworthiness of data and sample size. Moreover, the credibility of quantitative studies is based on replication of results and does not acknowledge the messiness of qualitative data (Braun & Clarke, 2013a; Creamer, 2018; Creswell, 2011; Sparkes, 2015). Additionally, there can be one dominant study that relies on quantitative methods which leads to issues of the relative weight of qualitative and

quantitative strands (Creamer, 2018; Sparkes, 2015). Finally, findings may differ from different forms of enquiry (Sparkes, 2015).

Mixed methods research is increasingly becoming common practice where it is best conceptualised as a combination of qualitative and quantitative methods and allows us to make sense of a social reality (Creamer, 2018; Creswell, 2011). Instrument development and testing are the complimentary use of quantitative and qualitative methods (Braun & Clarke, 2013a). Considering the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1984) and the College Adjustment Test (CAT; Pennebaker et al., 1990), both utilise qualitative approaches to gain student perspectives on college adjustment issues to develop items for the scales. In both cases methodological decisions were driven by the study needs (Miles et al., 2014; Onwuegbuzie & Leech, 2005). At the time, the studies were not labelled as mixed methods research, but perhaps this was because the approach had not been labelled as such, at that time (Creswell, 2011). A quantitative research method would give exact measures in numbers but verbal accounts of lived experiences are required to identify items for the new scale. In this thesis, the qualitative approach could be considered to be the 'small q' where the dominant approach is quantitative (Braun & Clarke, 2013a). Qualitative provides a precursor to the quantitative studies for a more comprehensive view of college adjustment (Creswell, 2011; Sparkes, 2015). Mixed methods research will be conducted to develop and test a new instrument that measures new college adjustment issues. Findings from qualitative research will inform the item creation and quantitative methods will be conducted to further examine and validate the new instrument.



### 1.3 Research aims and objectives

The overall aim of this thesis is to develop and validate a new instrument that assesses the role of social media on college adjustment. Justification for the research is addressed by reviewing currently available college adjustment and social media literature, with the aim to develop and validate a new instrument that incorporates social media use, and other current adjustment issues that students experience, that may not be addressed in existing scales. Psychological theories such as social capital (Granovetter, 1973; Putnam, 1990), the need to belong (Baumeister & Leary, 1995), social identity (Serpe, 1987; Tajfel & Turner, 1979) and uses and gratifications theory (U&G; Katz et al., 1974) are considered with regard to new and current college adjustment issues. The new instrument concerns student adjustment in starting and attending undergraduate courses in both higher and third level education, and students' corresponding use of social media. The term 'college' can be misleading considering the definition across countries and continents. To reduce ambiguity regarding definitions and to include contemporary adjustment issues, the new instrument will be referred to as the 'student adjustment scale' throughout this thesis.

For the first study, qualitative research is conducted in order to gain insight into students' perspectives of college adjustment (Braun & Clarke, 2013a), and considers that there are multiple versions of reality and knowledge (Braun & Clarke, 2013a). This approach is concerned with describing an event from an individual's perspective, such as feelings, thoughts and perceptions of their own reality through an in-depth exploration of individual's experiences via group interviews. Two research questions are addressed in this study: the effect

of blended (face to face and online) interactions on college adjustment and the new experiences in college adjustment for students. The approach taken to address these questions is two-fold, firstly student data is analysed to identify themes and secondly literature in the area of the need to belong (Baumeister & Leary, 1995), social identity (Serpe, 1987; Tajfel & Turner, 1979) are incorporated into the findings and discussion.

The second study addresses the issue of the item construction of the student adjustment scale. This aims of this study are two-fold, firstly to construct the items based on the findings from the qualitative study and secondly to reduce the dimensions of the scale while addressing content validity. A pilot scale is distributed to students across courses, different years of study and two educational institutes.

The third study involves confirming the structure of the new scale using a confirmatory factor analysis. Furthermore, convergent validity with an existing college adjustment scale is tested.

The final study is concerned with the effect of individual differences on college adjustment. Each subscale of the student adjustment scale will be examined in relation to the effect of personality traits on student adjustment.

#### **1.4 Chapter structure**

The current thesis includes six chapters alongside the current chapter, which outlines the rationale and aims of this research. A brief summary of each chapter can be found below:

Chapter two provides an overview of background literature that is relevant to college adjustment such as social capital (Granovetter, 1973; Putnam, 1990), the need to belong (Baumeister & Leary, 1995), social identity

(Tajfel & Turner, 1979; Stryker & Serpe, 1982), uses and gratifications theory (Katz et al., 1974) and personality (McCrae & Costa, 2008). In particular, research on personality, social media and college adjustment is reviewed for inconsistencies in findings and explores the college adjustment and social media measurements used to conclude on these findings. Furthermore, existing college adjustment and social media measurement scales are reviewed for validity and suitability for use in the current thesis. This concludes with a proposal of a theoretical framework which the development and validation of the new scale will endeavour to address.

Chapter three is concerned with real experiences of college adjustment and captures data through interviews with students, in order to identify items for a new college adjustment scale. Using qualitative analysis, five overarching themes are identified as a result of a thematic analysis (Braun & Clarke, 2006, 2013a) and are described in relation to relevant psychological theory.

Chapter four is concerned with the new scale item construction, based on the five overarching themes identified in chapter three. Items are identified based on quotes from students, associated sub-themes and overarching themes. The item pool is refined to 171 items based on feedback and is distributed amongst 418 participants. A factor analysis results in six factors with 76 items.

Chapter five details a confirmatory factor analysis of the six component model that was identified in chapter four. The refined scale is distributed to undergraduate students across years, courses and educational institutes, resulting in 268 cases. It considers all of the assumption violations of the data and returns to an exploratory factor analysis in order to further refine the scale.

The intercorrelations of the new scale are discussed in light of the role of social media use on the other factors. Convergent validity is reported using the College Adjustment Test (CAT; Pennebaker et al., 1990).

Based on the findings from chapter five where the data did not fit the six component model, chapter six is an empirical study that explores the possibility that college adjustment is affected by other attributes, such as personality traits. This study involves a questionnaire that explores the effect of personality on student adjustment, using the newly developed student adjustment scale. Results are discussed in light of existing literature in the area of college adjustment and social media use.

Chapter seven concludes the thesis by highlighting the main findings and unique contributions by summarising the results of the thesis. It discusses the implications of this thesis and the possible areas of future research, as well as practical recommendations that can be adopted by faculty and student experience teams to assist students in their adjustment to college.

## **Chapter 2: Literature Review**

Starting university or college can present a challenging shift for students where many aspects of their lives are changed significantly over a short period of time, from the way that they learn, to where they live, and who remains in their social circle. The transition period for students into university or college presents significant challenges that characterise so many preconceptions of university and college life (Baker & Siryk, 1986; Credé & Niehorster, 2012; Risquez et al., 2013). First year students not only face a new environment of learning, but also need to adapt to new circumstances such as managing interpersonal skills, growing accustomed to being on-campus, managing time effectively, managing friendships and establishing new relationships with classmates and lecturers (Baker & Siryk, 1986). Increasingly, over the last number of years, students are using social media to maintain existing friendships and to navigate new relationships in college (Ellison et al., 2007, 2011; Ellison et al., 2014; Gray et al., 2013; Jeon et al., 2016).

The use of social media is increasing globally, and currently with two and a half billion active users who have logged in at least once in the preceding 30 days, Facebook is still the most popular social media site, followed by WhatsApp with two billion, Instagram with over one billion and TikTok with over 800 million (Statista, 2020). Considering the rate of development and adoption of social media sites by students, constant examination and research is necessary to examine how social media affects college adjustment.

There are existing college adjustment and social media scales that are used in numerous studies to measure social media usage and how it affects areas of college adjustment (Ellison et al., 2007; Gray et al., 2013; Kalpidou et

al., 2011). However, there is no single scale that considers social media use to be an integral part of college adjustment. This could be attributed to the timeline of the development of widely used college adjustment scales, such as the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989), that were developed in the 1980s and 1990s before the introduction of social media.

College adjustment itself is considered to be a multi-faceted area and the most widely used scale, the SACQ (Baker & Siryk, 1986) is considered to be the college adjustment taxonomy that is widely accepted by educators as the premise of college adjustment (Credé & Niehorster, 2012). It focuses on four factors: academic, social, personal-emotional and goal commitment/institute attachment of college adjustment (Baker & Siryk, 1989; Credé & Niehorster, 2012). Academic adjustment is associated with individual differences (Watson & Hubbard, 1995), social adjustment is associated with social capital, the need to belong and social identity (Ellison et al., 2007, 2011; Ellison et al., 2014; Gray et al., 2013; Thomas et al., 2017; Wohn et al., 2013), personal-emotional adjustment is associated with well-being (Bano et al., 2019; Burke et al., 2011; Kalpidou et al., 2011; Kim & Lee, 2011; Manago et al., 2012), and institute attachment is associated with satisfaction with life (Maziriri, 2020). Individual differences are associated with all of the college adjustment scales (Gil de Zúñiga et al., 2017).

This chapter aims to review literature on social media use during college adjustment whilst considering social capital theories (Adler & Kwon, 2002; Granovetter, 1973; Putnam, 2000), the need to belong (Baumeister & Leary, 1995), social identity (Stryker, 1968; Tajfel & Turner, 1979; Turner & Reynolds, 2012), uses and gratifications (U&G; Katz et al., 1974) and the effect of

personality traits on college adjustment (Costa & McCrae, 1992; Goldberg, 1992, 1999; Goldberg et al., 2006). College adjustment issues are not limited to first year students only, but exist for students across all years of study in colleges and universities (Baker & Siryk, 1986; Kalpidou et al., 2011; Taylor & Pastor, 2005). For the purpose of this thesis, research is therefore concerned with undergraduate students across all years of study.

Existing college adjustment and social media scales will be reviewed with particular focus on development and validation methods, with a view towards a justification to design and develop the student adjustment scale that incorporates students' use of social media. The chapter will conclude with a theoretical framework underpinned by literature that will be implemented throughout this thesis.

## **2.1 Social capital and online friendships**

Putnam (2000) defined two stages of social capital: bridging and bonding. Bridging social capital incorporates Granovetter's (1973) weak ties and presents more opportunity to expand a network, where weak ties become a bridge between close knit groups of people and without them, momentum would not spread outside of a group. Weak tie networks are less likely to provide emotional support and are more likely to yield bridging social capital. Bonding social capital is the relationship between individuals and identities and subsequently social norms that arise from these relationships. Putnam (2000) postulates that strong ties will more than likely provide emotional and practical support and are more likely to yield bonding social capital.

Bonding and bridging social capital are not mutually exclusive, they can happen simultaneously as is evident through research on college adjustment

where social capital is linked to academic motivation, academic achievement and social adjustment to college (DeAndrea et al., 2012; Gray et al., 2013; Schwartz et al., 2017). Social capital allows individuals to draw on social support, information and assistance with tasks within their networks, whether they are close knit or not (Helliwell & Putnam, 2004).

Prior to the introduction of the Internet, maintaining relationships and friendships was considered to be part of the function of social groups where there is a shared identity (Putnam, 2000). Since then, computer mediated communications (CMC) have been shown to facilitate the growth of weak tie networks and bonding of groups of people who have something in common (Hampton, 2003; Mandelli, 2002). In contrast, Nie and Hillygus (2002) found that time spent online vies with face to face interactions. This research was conducted before the widespread adoption of social networking sites and instant messaging platforms. Due to the lack of definition of online social activities in their work, it is difficult to ascertain the type of online relationships that were involved in this study. As research in the area of social media progressed, Facebook was found to be associated with social bridging, perceived social bonding, maintenance of friendships and communication with acquaintances (Ellison et al., 2007, 2011; Gray et al., 2013), however the measurement was based upon social capital scales that have not been validated (Ellison et al., 2007).

Since then, many studies have explored social capital through social media use where the term 'friend' has expanded beyond the traditional meaning (Ledbetter, 2017) into 'online friendship'. The term evolved over a number of years as social media research extended to identify that social capital could



increase online, and furthermore bridging social capital could flourish as virtual groups were recognised as opportunities to widen social groups (Ellison et al., 2007, 2011; McKenna & Green, 2002; Williams, 2006). The notion of online friendship has evolved since the adoption of online social media. The nature of interpersonal relationships, whether online or face to face or a mixture of both, is generally missing from literature (Ledbetter, 2017). Literature highlights how social media is used, amongst other things, as a tool to:

- manage weak ties and maintain old friendships (Ellison et al., 2007, 2011)
- enhance relationships when used prior to starting college (DeAndrea et al., 2012)
- have fun and know what's going on in a social network (Quan-Haase & Young, 2012)

It is worth noting that social media does not necessarily strengthen already strong friendships and undirected broadcast messages (such as a Facebook status) do not directly develop relationships (Burke et al., 2011). Furthermore friendship maintenance behaviours on Facebook are concerned with maintaining weak ties rather than maintaining strong friendships (Ellison et al., 2014).

For the purpose of this thesis, the definition of online friendships is taken from college adjustment and social media literature, where students extend their friendships online and this extension becomes a component of the friendship that needs to be managed and maintained (Ledbetter, 2017). The role of online friendships and their interaction with both bridging and bonding social capital is not the only reason that students gravitate towards social media use as part of

college adjustment. Using social media at critical points in life can help a person build their social identity (Serpe, 1987; Tajfel & Turner, 1979) and meet their need to belong (Baumeister & Leary, 1995).

## **2.2 The need to belong and social identity theory**

The need to belong involves individuals' needs to form stable and consistent positive social contact with a small number of people and to avoid the termination of existing friendships (Baumeister & Leary, 1995). It is also a motivation to establish strong social relationships with members of a group and establish a salient social identity with that group (Baumeister & Leary, 1995; Serpe, 1987; Tajfel & Turner, 1979). Perceived threats of lifestyle changes regarding new social circles, possible new living arrangements and independent learning can induce fear for students and may stimulate the need to belong or may even increase the tendency to form strong relationships. The psychological need to belong has two main features where people need regular positive interactions with others, and people need to feel that there is a continuous bond with another person (Baumeister & Leary, 1995). For first year students, strong stable relationships in college and from home can affect social adjustment (Baker, 2002). Therefore, students may seek out ways of maintaining and establishing support through face to face and online interactions since belongingness appears to be a powerful factor in shaping human thought and identity (Baker, 2002; Baumeister & Leary, 1995; Serpe, 1987; Tajfel & Turner, 1979). The tendency to keep old friendships alive through social media could be an effort to avoid the intensity of feelings of loss that can happen when a friendship ends (Baumeister & Leary, 1995) as may be the case when students

physically leave home to attend college, or emotionally distance themselves from their peers who are not moving on to college or university with them.

A sense of belonging is related to all factors of college adjustment for example academic, social, personal-emotional adjustment and institutional attachment where a students' satisfaction with the institute and friendships can affect persistence at college (Baker, 2002). Previous literature has shown that a sense of belonging is, for example, associated with:

- persistence intentions to complete a course (Lewis et al., 2017)
- social acceptance (Freeman et al., 2007) where students who are more socially adjusted are likely to maintain old friendships (Hurtado et al., 1996)
- engagement with academic challenges (Wilson et al., 2015)
- emotions (Baumeister & Leary, 1995; Wilson et al., 2015)
- motivation, engagement and achievement (Zumbrunn et al., 2012)
- intrinsic feelings surrounding social acceptance and positive self-perceptions (Pittman & Richmond, 2008)
- self-worth (Gummadam et al., 2016)
- influencing interpersonal skills (Martinez-Lopez et al., 2019; Yazedjian & Toews, 2006)
- higher levels of college adjustment (Zumbrunn et al., 2012)
- social relationships, satisfaction with friends and feeling successful in academic pursuits where those who find it difficult to make new friends tend to stay connected with home (Bowman et al., 2019)

While a high sense of belonging is related to positive college adjustment outcomes, students are increasingly using a broad range of social media sites

to interact with friends (Yang & Lee, 2018), it is not unusual that students would be members of multiple sites with multiple social media accounts (Bano et al., 2015; Ellis et al., 2020; Utz et al., 2015; Yang & Lee, 2018). Using social media in the transition to college introduces students to the potential to expand their current network beyond physical limitations, it offers increased social networking and the possibility of belonging to an online community which may reduce feelings of social anxiety and loneliness (McKenna & Green, 2002; Thomas et al., 2020). However, in the same way as face to face, individuals tend to react emotionally to perceptions of being ignored online (Galbava et al., 2021) and therefore online friendships need to be maintained individually or within groups, but interaction needs to be frequent and individuals need to invest time and effort into managing online friendships and to avoid negative feelings, such as ostracism (Garbutt, 2009; Galbava et al., 2021; McEwan, 2013; McKenna & Green, 2002). The notion of belonging to a virtual group can increase confidence for those who may be suffering from social anxiety but still feel the need to belong to a social group (McKenna & Green, 2002). The unique feature of social media is that it allows for anyone to maintain friendships and establish new groups of friends and peers (Baumeister & Leary, 1995; DeAndrea et al., 2012; Ellison et al., 2007, 2011; Gray et al., 2013; Paul & Brier, 2001; Yang & Brown, 2013). A student may, for example, find that once they belong to an online group, they become identified by others as a member of that group, form a social identity that is derived by the group and behave according to group norms (Hogg & Reid, 2006; Tajfel & Turner, 1979). Research has shown that a life transition can cause stress due to a change to social identity particularly because it involves establishing new social networks and group

memberships (Jetten et al., 2010). Whilst the process may be difficult, the suggested benefits are that social identity can help students with overall well-being (Iyer et al., 2009), approaches to learning (Bliuc et al., 2011) and academic achievement (Chavous et al., 2018).

Social identity theory (SIT; Tajfel & Turner, 1979) involves the understanding of individual or interpersonal behaviour within the context of intergroup relations and behaviour regarding social interactions (Hogg et al., 1995; Tajfel & Turner, 1979). Two extremes are noted where 1) a relationship between two people that is not affected by social groups, an example of which could be two old friends; 2) interactions between groups of individuals that are fully determined by their memberships to social groups, where there is a shared social identity, for example students attending a college or university (Baumeister et al., 2016; Serpe, 1987; Tajfel & Turner, 1979).

Tajfel and Turner (1979) posit that there are three stages of social identity: 1) social categorisation where individuals place themselves in a category such as 'university student'; 2) social identity where an individual's self-image is derived from the social category to which they feel a sense of belonging; 3) social comparison where the group to which the individual belongs ('in-group') is compared to another group ('out-group') in a favourable light such as comparison to students who attend another college or university. Social comparison between groups is a process of social identity, where members of the group perceive themselves to be in the same social category or group and they must maintain superiority over the 'out-group' and conform to 'in-group' norms (Tajfel & Turner, 1979).

A further development of SIT is social categorisation theory of the self (SCT; Turner & Reynolds, 2012). SCT explains when a group is a group and when individuals come to think, act and feel as part of a psychological group. In addition, individuals within a group recognise the collective differences between the 'in-group' and the 'out-group', where there are similarities amongst the members of the 'in-group' and there are perceived differences with the 'out-group' (Tajfel & Turner, 1979; Turner & Oakes, 1997; Turner & Reynolds, 2012). An example of which lies with students who identify as 'college student' where social identity can be associated with academic achievement, but they may also identify with an ethnic group (Chavous et al., 2018; Frings et al., 2020). SCT made unique contributions towards two social psychological processes: social influence where it is postulated that individuals belong to groups, not to gain approval but because individuals believe what is being said within those groups; and stereotyping where it is perceived that stereotypes were flexible and not fixed and how people act within groups, depends on the group (Reicher et al., 2012; Turner & Reynolds, 2012). The perceived status of a social group is essential because membership to groups define social identity and in turn, social identity is likely to influence levels of self-esteem and self-efficacy (Caricati et al., 2020; Guan & So, 2016; Tajfel & Turner, 1979; Turner & Onorato, 1999; Turner & Reynolds, 2012).

### **2.2.1 Individual differences**

Social media research suggests that student online social interactions are more closely associated with general self-efficacy than face to face interactions (Yang et al., 2021). Self-efficacy is considered to be a self-belief in a situation specific capability, to execute action to attain one's goals (Bandura,

1994, 1997) and is shaped by social activity (Howle et al., 2015). In social media literature, those who are more active online show higher self-efficacy than those who are active in a face to face environment (Yang et al., 2021) and are more likely to trust content on social media (Hocevar et al., 2014). Additionally levels of self-efficacy are likely to influence pro-social behaviour (Caprara, Alessandri & Eisenberg, 2012). The college adjustment literature suggests that online social media intensity influences levels of academic self-efficacy (Howle et al., 2015; McNallie et al., 2019). Using the College Self-Efficacy Instrument (CSEI; Solberg et al., 1993), Ramos-Sánchez and Nichols (2007) found that self-efficacy is a predictor of college adjustment, however, they modified the instrument to retain items that were specific to their study. Whilst they reported reliability coefficients, they did not validate the structure of the modified instrument. In general, self-efficacy is found to be associated with academic achievement and social media use (Chemers et al., 2001; Feldman & Kubota, 2014; McGeown et al., 2014; McNallie et al., 2019). The amount of time and effort spent on improving self-efficacy through online interaction may impact on time and cognitive capacity for other endeavours relevant to college adjustment, such as academic challenges.

Self-esteem is the individual's perception of self-worth, where they believe that they must be or do something in order to have worth as a person (Crocker & Knight, 2005). It is considered to be both state and trait, and emotions surrounding self-worth are associated with state self-esteem (Brown & Marshall, 2006). Crocker and Knight (2005) argue that in the pursuit of high self-esteem, only short-term emotional benefits are achieved with associated costs such as stress and anxiety. The effect of which could be the neglect of other

endeavours such as academic achievement in relation to self-regulation (Crocker & Knight, 2005; Reed et al., 2020), particularly around problematic social media use (Whelan et al., 2020).

Individual differences are influenced and shaped by social identity, some of which are situation specific and liable to fluctuate, such as self-efficacy and self-esteem. Social identity can influence online group formation and behaviour which needs to be considered in light of college adjustment.

### **2.2.2 *Deindividuation and SIDE***

Literature in the area of group formation considers deindividuation which refers to the loss of individual identity and subsequent perceived anonymity of the individual in merging with a group. It claims to result in a weakening of psychological limits and social norms, and furthermore a lessening of the sense of self which may lead to an absence of self-regulation (Festinger et al., 1952; Prentice-Dunn & Rogers, 1989; Zimbardo, 1969).

The social identity model of deindividuation effects (SIDE; Spears & Lea, 1992) is a social identity critique of deindividuation theory (Spears, 2017). It is concerned with the use and subsequent effect of anonymity in groups. There are two dimensions to SIDE, cognitive and strategic: the cognitive dimension postulates that anonymity increases the salience of a group identity where group identity becomes meaningful through comparison with another relevant 'out-group' (Reicher et al., 1995); the strategic dimension is concerned with strengthening connections within groups which can reduce accountability to the 'out-group' (Spears, 2017). SIDE claims that for groups that are goal-directed, all members should either be non-anonymous or anonymous but not a mixture of both (Spears & Lea, 1992).



According to the SIDE model, individuals tend to shift from the personal to the social level of identification where they identify with a group, this does not mean that they lose their sense of self or control over their behaviour, rather the social self becomes more salient than the personal self (Reicher et al., 1995). Therefore behaviours that may be viewed as anti-normative or disinhibited may actually be associated with conforming to group norms (Spears, 2017) rather than anonymity which was previously associated with online disinhibition (Suler, 2004). One of the critiques of deindividuation theory is that there is no consistent evidence that deindividuation variables such as anonymity, group size and reduced self-awareness lead to anti-normative behaviour (Spears & Lea, 1992) but it is suggested that manipulations of these variables can cause fluctuation in social identity saliency (Reicher et al., 1995). Furthermore, earlier SIDE research focusses on the affordances of media in relation to anonymity, but recent literature considers that social media facilitates the dissemination of information across groups and can influence others to take coordinated action either online or offline (Spears, 2017; Spears & Postmes, 2015).

### **2.2.3 Anonymity**

Both positive and negative sides to anonymity in CMC are acknowledged in literature. It can promote positive psychological aspects such as control over personal privacy, an enablement of honest and personal online disclosure and autonomy (Bayne et al., 2019; Christopherson, 2006). However, complete anonymity in CMC is difficult considering the traceability of IP addresses that allows identification of a physical address (Spears, 2017), although there are anonymising services available that can encrypt user details. Furthermore, some social media accounts are verified by mobile phone numbers or email

addresses (Bayne et al., 2019). Literature suggests that anonymity protects individuals from social disapproval if they deviate from social norms and that anonymity may remove the risks of personal data breaches (Bayne et al., 2019; Mann et al., 1982). Visual anonymity is predominantly measured in SIDE studies (Lea et al., 2000).

In previous research, there are differences in findings regarding the content of anonymous posts by students on the social media platform Yik Yak. Some posts were considered inflammatory but context specific to the college environment (Black et al., 2016), but other students shared genuine feelings around university life and received empathetic responses (Bayne et al., 2019). The differences in findings could be attributed to the lack of the definition of offensive language online (Bayne et al., 2019) or cultural differences regarding the use and social acceptance of offensive language. Online behaviour is influenced not by anonymity but possibly by the salience of a social identity encapsulated by a sense of an online student community (Spears, 2017). Therefore individuals who engage with online posts may have a more positive association with the group identity (Mikal et al., 2015; Spears, 2017).

Whilst perceptions of anonymity may increase the likelihood for bluntness and clarity (Whittaker & Kowalski, 2015) and positively correlate with toxic online disinhibition (Bartlett & Helmstetter, 2017; Suler, 2004), online aggressive behaviour is not always anonymous. Rost et al. (2016) found that non-anonymous contributions on social media can be aggressive especially in relation to 'fire-storms' on social media which involves crowd based anger where a person, group or institution are subject to a large amount of negative attention. The SIDE model cannot explain negative behaviour in online groups

(Spears, 2017) but other research suggests that perpetrators of cyber-aggression are more likely to be friends who share content without permission (Mishna et al., 2018) and furthermore that cyber-aggression is influenced by anti-social personality traits (Kurek et al., 2019). Online aggression can take many forms such as flaming, cyberbullying, online harassment, cyber-aggression, toxic online disinhibition and trolling amongst others. Exploration into these are not covered as part of the current thesis but their existence is important to acknowledge in light of some student experiences of social media.

#### **2.2.4 Identity theory**

In contrast to SIT, identity theory (Serpe, 1987; Stryker, 1968; Stryker & Burke, 2000; Stryker & Serpe, 1982) posits that society affects social behaviour of individuals and is concerned with the effect of roles in society on the self. Both SIT and identity theory consider the self to be a multi-faceted construct (Hogg et al., 1995; Stryker, 1968; Tajfel & Turner, 1979). Specifically, identity theory posits that the self mirrors a broader social structure which is a collection of social identities, and these identities are based on roles occupied by the individual (Hogg et al., 1995; Serpe, 1987; Stryker & Burke, 2000). Central to identity theory is role identity, which is a self-definition as a member of one or more social categories such as 'college student', 'parent', 'athlete' and so on (Stryker & Burke, 2000). Within identity theory, role identities themselves have a hierarchical structure, the more salient the role for the individual then the higher its position in the hierarchical structure, furthermore, identities are borne from these roles. College student identities are associated with academic, social, intellect and interpersonal facets of college adjustment (Burke & Reitzes, 1981; Serpe, 1987; Stryker & Burke, 2000). The notion of role commitment is captured

by the number and importance of social relationships associated with role identity that may influence the salience of that identity (Stryker & Burke, 2000). Students starting college, in an effort to belong, tend to create a social identity in addition to existing identities (Serpe, 1987). Hence the possibility that students may experience multiple roles across multiple online and face to face social networks (Iyer et al., 2009; Stryker & Burke, 2000; Thomas et al., 2017; Whelan et al., 2020). Furthermore, identities maintain social structure through performing the roles as identified in society (Burke & Stets, 1999; Serpe, 1987). Individuals can have multiple simultaneous social identities and some are more salient than others (Ashforth & Johnson, 2001; Iyer et al., 2009; Thomas et al., 2017; Serpe, 1987; Stryker & Burke, 2000).

### **2.2.5 Online social identities**

Social media affords students the ability to bridge and bond with groups online, as either an extension of friendship (Ledbetter, 2017) or distinct from their offline social identities. This may result in multiple online social identities being formed within these groups (Kramer, 2006). During college adjustment, students tend to create groups, both online and face to face, to address the need to belong (Baumeister & Leary, 1995; Freeman et al., 2007) and in doing so demonstrate social mobility which is the ability to move to other social groups that could be construed as a growth in social status (Tajfel & Turner, 1979). However, students' social media use suggests that they do not simply move from groups but instead, perhaps for social or academic adjustment purposes, maintain old groups in addition to joining new friend groups in an online environment, whilst striving for relationships free from negativity (Baumeister &

Leary, 1995; Bowman et al., 2019; Ellison et al., 2007, 2011; Iyer et al., 2009; Manago, 2015; Serpe, 1987; Stryker & Burke, 2000).

From an individual perspective, prior to the development of social media, Turkle (1999) found that the creation of several personae across multiple forums or chat rooms was not an unusual practice, where a person's identity became the sum of the online personae. She also suggests that social identities can change by actually changing virtual place. Considering the plethora of online social media sites used by college students, each site can be used for specific reasons (Yang & Lee, 2018) and students have the added pressure of maintaining social identities across multiple groups and possibly across multiple sites (Thomas et al., 2017).

The number of identities held by any individual is associated with difficulty in dealing simultaneously with relationships among the identities (Stryker & Serpe, 1982). This in turn may present a psychological limitation that curbs simultaneous interactions with friends that technology may not be able to overcome (Dunbar, 2018). Therefore, social media affordances may present a challenge to current college students to simultaneously deal with multiple social identities whilst navigating a new college environment (Cao et al., 2018; Whelan et al., 2020).

The evolution to managing online friendships presents opportunities to communicate more frequently and rapidly, but possibly with risks of cognitive overload, inadequate college adjustment and excessive social media use (Cao et al., 2018; Dunbar, 2018; Gomez-Rodriguez et al., 2014; Whelan et al., 2020). Cognitive emotional preoccupation with social media can result in problematic or excessive use of social media (Cao et al., 2018), similar to friendsickness

where preoccupations with old friends can result in difficulty in social adjustment in college (Paul & Brier, 2001). Furthermore, a preoccupation with social media can disturb concentration on other college tasks (Cao et al., 2018). Drawing on cognitive load theory, the use of social media either in class or during study time can reduce deep learning and limit the working memory of students, furthermore it can occur when there is more information than the mind can grasp which may result in poor academic adjustment for students (Cao et al., 2018; Mayer & Moreno, 2003; Sweller, 1994; Whelan et al., 2020).

Procrastination on Facebook as a habit and for enjoyment purposes is associated with higher levels of academic stress, and trait self-control predicted the frequency of Facebook checking (Meier et al., 2016). In addition, when Facebook is used instead of working on academic challenges, the result is heightened anxiety for students (Sternberg et al., 2020). Numerous studies found that education goals highly conflicted with social media use (Du et al., 2018; Hoffman, Baumeister et al., 2012; Hoffman, Vohs et al., 2012).

### **2.3 Uses and gratifications theory**

Limited consideration is given to multiple online social identities that spread across groups and across social media sites in social media literature. In managing multiple online social identities, students are also managing multiple friendships, either through establishing new networks or maintaining old friendships (Ellison et al., 2007; Ellison et al., 2014; Graham-Bailey et al., 2019; Gray et al., 2013). One possible explanation is that students use social media to gratify long or short term needs such as the need to belong (Baumeister & Leary, 1995) or to establish new social identities (Serpe, 1987; Stryker & Burke, 2000; Stryker & Serpe, 1982; Tajfel & Turner, 1979) specific to being a college

or university student. Uses and gratifications theory (U&G; Katz et al., 1974) may shed light on why social media is used in this way.

U&G originated with Katz et al. (1974) as an approach to explore individual motivations regarding media choice to satisfy needs and achieve goals. There are five basic assumptions of U&G: 1) users are active and goal-directed consumers of media; 2) the user selects media in attempts to gratify their needs; 3) the form of media may compete with other more conventional alternatives to fulfil needs, for example, more time may be spent online with friends than face to face; 4) users can easily articulate their own needs and reasons for using media; 5) users judge the quality of the media communications and place value on it, according to their individual motivations and gratifications of use. Katz et al. (1974) proceed to argue that needs can be met through using mass media communications and that media creates the needs that it satisfies. However, since the inception of U&G, the definition of mass media has changed and evolved from television, radio and print sources to include email, internet, social media and instant messaging. Researchers report that U&G theory is as relevant to current mass media communications, such as social media, as it was to older forms of communications (Katz et al., 1974; Rubin, 2002). For example, using social media to connect with other people may increase the frequency of use of social media to continue to satisfy the need as connections grow (Chen, 2011). As discussed earlier, for college students, satisfying the need to belong may result in multiple memberships of groups across social media platforms.

Using the U&G approach to develop measurement scales for social media use is common practice, however there is no fixed set or systemised list

of gratification or needs categories, these should be defined by the researcher for the study at hand (Katz et al., 1974). There are, however, similarities in research findings where the most common motivations for individuals using social media and instant messaging include: social interaction and connection (e.g. maintaining friendships and making new connections), information sharing, information and social investigation (Chen, 2011; Grellhesl & Punyanunt-Carter, 2012; Joinson, 2008; Orchard et al., 2014; Raacke & Bonds-Raacke, 2008; Wang et al., 2012; Yang & Brown, 2013). This supports the college adjustment literature where relationship maintenance and establishment of new support networks impacts college adjustment (DeAndrea et al., 2012; Ellison et al., 2007, 2011; Gray et al., 2013). These factors are relevant to motives behind social media use. For example, Grellhesl and Punyanunt-Carter (2012) identify five factors of motivations for undergraduate college students in using text messages to communicate that include information seeking and socialisation, however, levels of gratifications in using text messaging were not measured. In an examination of social media use, Wang et al. (2012) found that social needs are the biggest reason for using social media amongst college students, however their data suggests that social media use is not socially gratifying. This is in contradiction to other literature where social media is beneficial to social relationships in the form of social capital (Gray et al., 2013; Steinfield et al., 2008). A possible reason for this contradiction is that different scales and theory are used to assess social gratifications.

Furthermore, Wang et al. (2012) examined a mixture of email, instant messaging and social media platforms rather than focussing on one specific social media platform, such as Facebook. Yang and Brown (2013), in their



examination of the associations between Facebook use motivations and social college adjustment, found that Facebook use only satisfied maintaining existing relationships and did not satisfy the need to pursue new relationships. These findings support other research where students use social media to maintain friendships, bridge new relationships and information seeking during college adjustment (Gray et al., 2013; Jeon et al., 2016). A criticism of using the U&G approach is that lists of gratifications and needs are study and research specific (Katz et al., 1974). In order to determine if media meets the needs of the individual, the researcher must consider human and societal needs as part of their research (Katz et al., 1974), such as social capital (Ellison et al., 2007, 2011; Granovetter, 1973; Putnam, 2000), the need to belong (Baumeister & Leary, 1995) and social identity (Stryker, 1968; Stryker & Burke, 2000; Tajfel & Turner, 1979), all of which could be considered motives for social media use. However, managing online friendships and using social media to do so, is not only driven by uses and gratifications (Katz et al., 1974) but also individual differences such as personality traits (Amichai-Hamburger & Vinitzky, 2010; Credé & Niehorster, 2012; Gil de Zúñiga et al., 2017; McKenna & Green, 2002; Orchard et al., 2014; Ross et al., 2009; Turner & Onorato, 1999).

## **2.4 Personality traits**

Personality traits are based on a set of theories based on attributes of people, they describe what can define an individual and are considered to be individual difference variables (McCrae & Costa, 1996). They are explored in relation to college adjustment under the guise of coping, transitioning and adapting (Bardi & Ryff, 2007; Credé & Niehorster, 2012; Pennebaker et al., 1990) and research suggests that in times of life transitions, psychological

outcomes are mostly dependent upon individual differences (Costa et al., 1987; Watson & Hubbard, 1996). Personality can affect how and why social media is used, for example, individuals with social anxieties may prefer the use of online groups (McKenna & Green, 2002), whereas others who avoid the trauma of friendship loss may be inclined to use social media when adjusting to college to stay in touch with old friends (Baumeister & Leary, 1995). Personality traits are associated with Facebook use, frequency of social media use, motivations of Facebook use, social interaction, the number of online friends, and college adjustment (Amichai-Hamburger & Vinitzky, 2010; Gil de Zúñiga et al., 2017). However, there is limited research on the combination of college adjustment, social media use and personality (McCrae & Costa, 1996; Watson & Hubbard, 1995).

An examination of personality traits is warranted to explore how individual differences may affect college adjustment issues in relation to social media use. To gain an insight into the effect of personality on current college adjustment issues, it is necessary to consider each of the personality traits in light of available literature on the topic. What emerges is a muddled picture of findings that is somewhat smeared by the tools used to assess links of individual factors to social media use in college adjustment.

#### ***2.4.1 Personality traits, college adjustment and social media***

The Big-Five taxonomy is possibly the most commonly used personality model in literature on college adjustment and social media measurement. The work now turns to discussing personality traits as measured by the Big-Five models of the NEO-FFI, NEO-PI-R (Costa and McCrae, 1992) and the 50-item IPIP (Goldberg, 1992, 1999; Goldberg et al., 2006) which have all been

implicated in previous research as bearing some relevance to college adjustment. The personality traits that will be discussed are from the aforementioned personality scales: extraversion, agreeableness, conscientiousness, neuroticism/emotional stability and openness to new experience/intellect and imagination.

#### **2.4.1.1 Extraversion.**

Extraversion is the tendency to have a preference for social interaction and companionship where individuals high in levels of extraversion tend to have numerous friendships, participate in team sports and may be members of multiple clubs (McCrae & Costa, 2008). Research into personality and coping suggests that extraverts are more likely to pursue support from friends and family during a life transition (Watson & Hubbard, 1996). Using a range of personality scales, social media and college adjustment measurements, literature in the area suggests that individuals high on extraversion:

- tend to use social media as a tool to maintain social contacts as a social extension but not to replace social interactions (Amichai-Hamburger & Vinitzky, 2010)
- have a higher number of Facebook friends (Ross et al., 2009)
- are more likely to use social media, video chats and instant messaging (Correa et al., 2013)

Results from studies differed with regard to the associations between extraversion and social media (Amichai-Hamburger & Vinitzky, 2010; Ross et al., 2009) due to the Facebook behaviour measurement. Both studies use the NEO-PI-R (Costa & McCrae, 1992) to assess personality in the domain of the five factor model. Amichai-Hamburger and Vinitzky (2010) use a measurement

based on the Facebook profile setup previously designed by Zhao et al. (2008) which involve users reporting details they had previously recorded on Facebook regarding basic, personal, contact, education and work information. The results of this study differs from Ross et al. (2009) where they use the Facebook Questionnaire, a self-report measure which was developed specifically for the study and is based on the Facebook Intensity Scale (FBI; Ellison et al., 2007). Amichai-Hamburger and Vinitzky (2010) found that levels of extraversion are positively related to being members of more Facebook groups but not associated with the number of friends or using Facebook's communicative functions, whereas Ross et al. (2009) did not find any association between extraversion and Facebook use. Amichai-Hamburger and Vinitzky (2010) suggest that the difference in results stem from the differences in the social media scales used in the two studies, where one was considered to be more objective (Zhao et al., 2008). However, there are other differences in the studies that should be considered, such as sample size and culture. For example, there is a distinct difference in sample size where one reported 97 participants from a US university (Ross et al., 2009) and the other reported 237 participants from an Israeli university (Amichai-Hamburger & Vinitzky, 2010), where the use of Facebook may have been different according to cultural or group norms. In contrast to Amichai-Hamburger and Vinitzky (2010), Skues et al. (2012) used the Facebook Questionnaire (Ross et al., 2009) to measure social media use and the Australian Personality Inventory (API; Murray et al., 2009) to measure three of the Big Five personality traits. Similar to Ross et al. (2009), they found that extraversion is not associated with Facebook use. The differences in

findings could be attributed to the differences in Facebook behaviour scales that are used across studies.

In more recent literature, using a range of social media measurements across studies, extraversion is a positive predictor of social media use in relation to general use and social media interaction (Gil de Zúñiga et al., 2017; Zhang et al., 2018), and is shown to significantly predict Facebook use motivations of new connections and recreation (Orchard et al., 2014).

In the college adjustment literature, a common finding is that levels of extraversion are associated specifically with positive social college adjustment and a preference for companionship and social stimulation (Bardi & Ryff, 2007; Kurtz et al., 2012; Schnuck & Handal, 2011). Using the SACQ (Baker & Siryk, 1989), Schnuck and Handal (2011) suggest that extraversion is correlated with positive adjustment on the social adjustment subscale of the SACQ specifically for females, whereas for males, extraversion is associated with positive adjustment on all SACQ subscales except for academic adjustment. In a meta-analytic study of literature on college adjustment, extraversion showed high correlations with social adjustment but weaker correlations with academic adjustment but personality scales were not discussed (Credé & Niehorster, 2012). Furthermore, in a study measuring the effect of personality on college adjustment, specifically self-esteem, social and academic adjustment, a college adjustment scale was developed specifically for the study at hand (Kilmstra et al., 2018). The college adjustment scale is based closely on the SACQ (Baker & Siryk, 1989) and using the NEO-FFI (Costa and McCrae, 1992) found that the extraversion facet of positive affect is positively associated with the three college adjustment indicators, even though self-esteem had never been

acknowledged as a college adjustment indicator in previous literature (Kilmstra et al., 2018). Using the same personality measurement, Nechita et al. (2015) found a negative correlation between extraversion and academic performance. Differences in findings could be attributed to the variations of college adjustment scales used in these studies.

#### **2.4.1.2 Agreeableness.**

Agreeableness is the tendency to be compliant with a forgiving attitude and is sensitive to social interactions but introverted aspects of agreeableness distinguish it from extraversion (McCrae & Costa, 1999, 2008).

The findings on the associations between agreeableness and social media use are mixed. Early studies measuring the effect of personality on Twitter and Facebook suggest that agreeableness is generally found to be unrelated to social and informational use on social media (Amichai-Hamburger & Vinitzky, 2010; Correa et al., 2013; Ross et al., 2009). In some studies, measurements for personality and social media use varied, and social media use is generally measured specifically for the study at hand. For example, Correa et al. (2013) use an additive scale developed specifically for the study, to measure frequency of usage of social media sites and instant messaging. There is no record of a systematic validation of the scale.

In contrast, a later study suggests that agreeableness positively predicts all forms of social media use, including the frequency of use and social interaction (Gil de Zúñiga et al., 2017). The scale measures social media use, is designed specifically for the study, and it is based on previous research carried out by the authors. Whilst there is evidence of internal reliability, there is no record of scale validation. The personality measurement is a mix of the Big-

Five, referring to the NEO-PI-R (Costa & McCrae, 1992), a brief measure of the Big-Five personality domains (Gosling et al., 2003) and the Big-Five trait taxonomy (John & Srivastava, 1999). Differences in results between studies regarding the effect of personality on social media use could be due to the variety of social media measurement scales that are implemented in such studies, mainly because they are developed for the studies at hand and show little evidence of systematic validation (Amichai-Hamburger & Vinitzky, 2010; Gil de Zúñiga et al., 2017; Ross et al., 2009).

A further example of which, is a study measuring the effect of personality on belongingness by using Saucier's (1994) brief version of Goldberg's Big Five markers and a belongingness scale developed specifically for the study, based on information seeking and communication (Seidman, 2013). They found that levels of agreeableness are positively associated with levels of belongingness on Facebook where agreeable individuals are more likely to pursue social acceptance and furthermore maintain old and new connections through Facebook (Seidman, 2013). The belongingness measurement demonstrated good internal reliability but there is no record of how the items were constructed and there are no documented scale validation statistics. As research progressed, findings for the effect of agreeableness on social media use gradually changed, where agreeableness significantly positively predicts habitual Facebook usage (Maziriri, 2020).

In relation to the limited literature on agreeableness and college adjustment, using the NEO-FFI (Costa & McCrae, 1992), agreeableness is positively associated with all SACQ subscales (Baker & Siryk, 1989), except for academic adjustment for women and social adjustment for men (Schnuck &

Handal, 2011). In addition, agreeableness is positively related to coping during life transitions (Watson & Hubbard, 1996). Using the Adolescent Personal Style Inventory (APSI) for College Students where agreeableness correlates with the agreeableness factor of the NEO-PI-R ( $r = .80$ ) (Costa & McCrae, 1992), there are significant negative correlations between agreeableness and withdrawal intention (Lounsbury et al., 2004), which suggests that the higher the level of agreeableness then the less likely the intent to withdraw from college.

#### **2.4.1.3 Conscientiousness.**

Conscientious individuals have a tendency to be motivated and driven towards achieving goals with a high sense of purpose (McCrae & Costa, 1999, 2008). They have high aspiration levels and tend to display leadership skills, tend to plan for long-term goals, establish a solid support network and may be expert in their area of work (McCrae & Costa, 1999, 2008). Conscientiousness is shown to be associated with navigating new challenges such as time management around academic and friendship demands during life transitions and is most strongly related to college adjustment, problem solving and coping (Credé & Niehorster, 2012; Watson & Hubbard, 1996). Furthermore, conscientiousness as rated by the self, peers and parents, predicts academic college adjustment (Kurtz et al., 2012).

Conscientiousness is positively correlated with the academic subscale of the SACQ (Baker & Siryk, 1989) for both females and males (Schnuck & Handal, 2011). In a study using the NEO-FFI (Costa & McCrae, 1992), conscientiousness is strongly associated with academic performance which was measured by two indicators: overall general average grade and the average grade from the last set of exams (Nechita et al., 2015). In a meta-analysis of the



Big Five and academic performance, conscientiousness is the strongest predictor of grade point average (GPA) scores (Vedel, 2014).

Conscientiousness typically has associations with the academic facet of college adjustment where it is significantly positively related to the final grade in an academic course (Lounsbury et al., 2003).

Using the Big Five Inventory (BFI-V44; John et al., 1991) and the SACQ (Baker & Siryk, 1989), Okun and Finch (1998) suggest that conscientiousness affects institutional commitments and organisation involvement, which indirectly affects subjective social integration and has the largest effect on institutional departure. The negative relationship suggests that individuals high on conscientiousness are less likely to consider leaving their course of study. Furthermore, in a later study, using the Personal Style Inventory (PSI; Lounsbury et al., 2003) developed by the authors, levels of conscientiousness are significantly negatively correlated with withdrawal intention (Lounsbury et al., 2004). In a meta-analysis of the NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992) and college adjustment, Kilmstra et al. (2018) found that aspects of goal striving and dependability are positively associated with social and academic adjustment.

Levels of conscientiousness are associated with numbers of Facebook friends, and using social media for news and social interactions (Amichai-Hamburger & Vinitzky, 2010; Gil de Zúñiga et al., 2017). Furthermore, Ross et al. (2009) suggest that those who are high on conscientiousness may try to ensure that they are socially included online.

#### **2.4.1.4 Neuroticism/Emotional stability.**

Neuroticism implies an emotional instability where participants are prone to negative affect and may suffer from low self-esteem, perfectionistic attitudes and pessimism (McCrae & Costa, 1999, 2008). This could relate to difficulties experienced during college adjustment where neuroticism is associated with passive and ineffective coping mechanisms (Watson & Hubbard, 1996).

Neuroticism is consistently the personality trait that is associated with negative college adjustment outcomes in literature, regardless of the range of personality and college adjustment measures (Bardi & Ryff, 2007; Brooks & DuBois, 1995; Kilmstra et al., 2018; Lu, 1994; Okun & Finch, 1998). In a study using the EPQ (Eysenck & Eysenck, 1975) to measure personality traits and psychological stressors (life events, university/college transition and daily hassles), neuroticism is positively associated with university stress (Lu, 1994). It is also the strongest negative predictor of subjective social integration which suggests that individuals higher on neuroticism perceive a lower social integration (Okun & Finch, 1998).

Using the SACQ (Baker & Siryk, 1989) and the NEO-FFI (Costa & McCrae, 1992), Schnuck and Handal (2011) found a strong relationship between neuroticism and low adjustment to college. They also found a significant relationship with the personal-emotional subscale of the SACQ, where females who scored high on neuroticism had lower personal-emotional adjustment. Similarly in a study sampling first year students and using the IPIP (Goldberg, 1992), evidence suggests that neuroticism/emotional stability is related to adjustment during a life transition (Bardi & Ryff, 2007; Brooks & DuBois, 1995). Regarding persistence at college, Lounsbury et al. (2004) found

a significant negative correlation between emotional stability and withdrawal intention. Using self-ratings and informant ratings from the NEO-PI-R (Costa & McCrae, 1992), Kurtz et al. (2012) report that neuroticism is significantly negatively associated with the personal-emotional and social adjustment subscale of the SACQ (Baker & Siryk, 1989). Furthermore, in a meta-analysis of personality development and adjustment to college, neuroticism is consistently negatively associated with college adjustment (Kilmstra et al., 2018).

In relation to social media use, using the Facebook Questionnaire (Ross et al., 2009) neuroticism has no relationship with Facebook use (Skues et al., 2012). In contrast, using proprietary measurements for Facebook and Twitter use, Hughes et al. (2012) found that younger individuals higher in sociability and neuroticism are associated with seeking social contact on Facebook. In some studies, levels of neuroticism are associated with time spent on social media sites (Butt & Phillips, 2008; Correa et al., 2013; Gil de Zúñiga et al., 2017). However, social media usage scales were developed specifically for studies and they also used a range of personality instruments. In an examination of the uses of Facebook, and using the EPQ (Eysenck & Eysenck, 1975) to measure personality, it is suggested that those high on neuroticism report using social networking sites for escapism (Orchard et al., 2014). The differences in findings could be attributed to the range of social media measures that are used and developed across studies, there is no commonly used scale and therefore it is unlikely that findings from studies would result in the same outcome.

#### **2.4.1.5 Openness to new experiences/Intellect-Imagination.**

Individuals high in openness to experience tend to be action focussed regarding a need for variety and change. They tend to have an interest in travel, along with many different hobbies and have diverse interests, their friends tend to share tastes with them and are willing to try new things (McCrae & Costa, 1999, 2008). In college adjustment and coping literature, openness to new experiences and intellect/imagination seems to be largely unrelated (Schnuck & Handal, 2011; Watson & Hubbard, 1996).

In contrast to these findings, in a later study, using the Personal Style Inventory (PSI; Lounsbury et al., 2003), openness along with conscientiousness, are significantly positively associated with the final grade in a psychology course (Lounsbury et al., 2003). Differences in results to earlier studies could be attributed to the different personality and college adjustment measures being used in research. Using the NEO-PI-R (Costa & McCrae, 1992) openness to experience is positively associated with the academic subscale of the SACQ (Baker & Siryk, 1989) from parent and peer ratings of personality, but not from self-ratings (Kurtz et al., 2012).

Using social media, experiencing new ways of networking and sharing personal information online fits individuals who are high on openness to experience (Amichai-Hamburger & Vinitzky, 2010; Butt & Phillips, 2008; Ross et al., 2009) but do not use social media to interact with others or consume news (Correa et al., 2013; Gil de Zúñiga et al., 2017).

Using the Mini-IPIP, a 20-item form of the 50-item IPIP (Donnellan et al., 2006), openness to experience is negatively associated with being involved with other people's posts especially with looking at other people's selfies (Choi et al.,

2017). In social media literature, it is generally found that levels of openness to experience are negatively associated with online socialisation and that social media tends to be used more for informational purposes with regard to posting intellectual topics or presenting personal views on current events (Hughes et al., 2012; Marshall et al., 2015). In contrast, using the Facebook Questionnaire (Ross et al., 2009), Skues et al. (2012) found that higher openness is associated with spending more time and having more friends on Facebook which supports previous research where those high in openness are more likely to pursue a wide range of interests (Amichai-Hamburger & Vinitzky, 2010). Again, the differences in findings could be attributed to the differences in the social media use and personality measures where there is no universally agreed taxonomy of social media use in literature.

#### ***2.4.2 Personality markers and measures of college adjustment***

The personality traits, as discussed in section 2.4.1, that are consistently associated with college adjustment are extraversion, conscientiousness, openness to experience and neuroticism. Regarding social media use, extraversion, agreeableness, conscientiousness and openness seem to be the most relevant traits. Literature on the effect of personality traits on social media use during college adjustment is very limited and a mix of personality scales, social media scales and college adjustment scales are used in studies, where consistency in use of scales across studies seems to be lacking. Personality scales that are widely used in college adjustment and social media literature are the Big-Five models of the NEO-FFI, NEO-PI-R (Costa and McCrae, 1992) and the 50-item IPIP (Goldberg, 1992, 1999; Goldberg et al., 2006) and the three factor model of the EPQ-R (Eysenck & Eysenck, 1985).

Two of the most commonly used personality scales are the Five Factor Model (FFM; Costa & McCrae, 1992) and the Eysenck Personality Questionnaire (EPQ-R; Eysenck & Eysenck, 1985). The main differences between the two scales are that the EPQ does not include two personality factors of agreeableness and conscientiousness. There has been much debate between the authors of personality scales regarding the hierarchical structure of personality. Eysenck (1992) claims that agreeableness and conscientiousness are primary factors of personality rather than at the highest level of the factor hierarchy, due to the narrow field that is covered by both and that it is necessary to consider personality theory. However, Costa and McCrae (1992) state that a systematic analysis of personality should precede and not follow theory. Psychometric evidence suggests that there is no way of deciding between the two constructs and that the choice of which personality scale to use is entirely subjective and based on the research at hand (Eysenck, 1992). For both the three and five factor models, the factors are independent of each other (Costa & McCrae, 1992) but both models share extraversion and neuroticism. For the purpose of this study, it is deemed that the five factor model suits the study design because of its successful application in previous college adjustment literature (Feldt et al., 2011a; McCredie & Kurtz, 2020; Schnuck & Handal, 2011; Watson & Hubbard, 1996).

The FFM (Costa & McCrae, 1992) is not accessible in the public domain and given these concerns Goldberg's 50-item IPIP (1992, 1999; Goldberg et al., 2006) is an alternative to conventional practice regarding personality assessment. Broad-bandwidth personality instruments were proprietary and not in the public domain, such as the NEO-PI-R, NEO-FFI (Costa & McCrae, 1992)

and the Minnesota Multiphasic Personality Inventory (MMPI; McKinley & Hathaway, 1944). The consequence of which was that the personality instruments could not be freely used by researchers and could possibly negatively impact on psychology personality research. Goldberg recognised that broad-bandwidth instruments were rarely revised, and expressed concern that scientific goals may be influenced by possible commercial gains.

The 50-item IPIP (Goldberg, 1992, 1999; Goldberg et al., 2006) was designed to have less items than the broad-bandwidth instruments and five traits of personality: 1) Extraversion; 2) Agreeableness; 3) Conscientiousness; 4) Emotional Stability; 5) Intellect/Imagination.

There has been some debate in personality literature regarding the definition of openness to experience and intellect, otherwise known as Factor V (McCrae, 1994), where intellectual interests is a key determinant in openness to experience but intellectual ability is not. Openness to experience combines a broad range of diverse interests, such as intellectual curiosity, liberal views, many different hobbies, adventurous tendencies e.g. towards travel and a need for variety (McCrae, 1994). Goldberg (1992, 1999) includes intellect/imagination as Factor V in the 50-item IPIP and claims that openness to experience has no role in the Big-Five model, although there are similarities between both factors, Goldberg (1994) claims that the Big-Five model is a taxonomic framework for genotypic attributes of personality. However, research has shown that the two factors are correlated, albeit weak strength but both measure similar constructs where  $r = 0.59$  (Goldberg, 1999).

## **2.5 Overview of college adjustment psychometric scales**

The college adjustment literature has so far painted a picture of a multi-faceted construct that includes psychological aspects such as social capital, the need to belong, social identity and individual differences which contribute towards understanding how students adjust to college and how they use social media during this period. As previously discussed throughout this chapter, findings from studies differ with regard to college adjustment and particularly social media use. This could be attributed to the wide variety of social media scales used in studies that do not evidence systematic validation. In addition, the most widely used college adjustment scale is the SACQ (Baker & Siryk, 1989) which was developed prior to the introduction and adoption of online social media. The inconsistency in social media usage scales combined with possibly outdated college adjustment scales justifies the progression towards reviewing existing scales on college adjustment and social media use.

There are two distinct lines of research on college adjustment:

1) the adjustment to college literature which focuses primarily on how effectively students adapt to various college adjustment challenges (Credé & Niehorster, 2012)

2) the literature that focuses on behavioural and emotional difficulties experienced by students. These issues include depression, anxiety, suicidal ideation, as well as alcohol and drug abuse amongst others (Credé & Niehorster, 2012)

This thesis will focus on the first category of the adjustment to college literature (Credé & Niehorster, 2012), where college adjustment scales are concerned only with issues that are specific to college adjustment, not prior



mental health or other issues that may affect it. In light of this, the following scales will not be included as part of this review: College Maladjustment Scale MMPI-2 (mt) (Kleinmuntz, 1960); the Inventory of College Adjustment Scales (CAS; Anton & Reid, 1991) and the University Student Depression Inventory (USDI; Khawaja & Brydon, 2006) but their existence and previous use is acknowledged as having been considered for their relevance to the current study.

The most widely used scale, the SACQ (Baker & Siryk, 1989) is considered to be the college adjustment taxonomy widely accepted by educators as the premise of college adjustment. It focuses on academic, social, personal-emotional and goal commitment/institute attachment (Baker & Siryk, 1989; Credé & Niehorster, 2012). The development of the SACQ was based upon the extant college adjustment literature at the time. However, those scales were developed in the 1940s and 1950s and measure just one construct per scale (Borow, 1945; Brown & Holtzman, 1956). There is also very little literature on the development of these scales and they did not consider multi-facets of college adjustment. They did, however, acknowledge that there are other unidentified factors at play in the process of college adjustment in addition to those that they measured (Popham & Moore, 1960). Examination of these factors is conducted in later literature on college adjustment scale development such as the College Adjustment Scales (CAS; Anton & Reed, 1991) that considered student issues that may have existed prior to starting college (Pinkney, 1992), the CAS belongs to the category of the adjustment of college students and will not be discussed in this chapter.

Based on literature discussed in the area of college adjustment and psychological constructs discussed earlier, the current work will focus in particular on the social and interpersonal aspects of college adjustment, and the subsequent role of social media. Therefore, college adjustment scales that include social and personal-emotional adjustment subscales will be included in this review, as these have been shown to be related to both maintaining and establishing online friendships (Baker & Siryk, 1989; Ellison et al., 2007, 2011; Ellison et al., 2014; Gray et al., 2013; Martinez-Lopez et al., 2019).

Other college adjustment scales that exclusively measure a single facet of college adjustment will not be included in this review such as: the College Inventory of Academic Adjustment (Borow, 1945), the Survey of Study Habits and Attitudes (Brown & Holtzman, 1956), the Academic Adjustment Scale (Anderson et al., 2016).

The current review therefore considers eight college adjustment self-report scales that measure many different facets of college adjustment:

- the College Adaptation Questionnaire (CAQ; Crombag, 1968)
- the Student Involvement Questionnaire (SIQ; Pascarella & Terenzini, 1980)
- the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989)
- the College Student Experiences Questionnaire (CSEQ; Pace, 1984)
- the College Adjustment Tests (CAT; Pennebaker et al., 1990)
- the College Life Task Assessment (CLTA; Brower, 1994)
- the College Adjustment Questionnaire (O'Donnell et al., 2018)

- the Inventory of New College Student Adjustment (INCA; Watson & Lenz, 2018)

With the exception of the College Adjustment Questionnaire (O'Donnell et al., 2018) and the INCA (Watson & Lenz, 2018), all other college adjustment scales were developed pre-social media. The development of the College Adjustment Questionnaire (O'Donnell et al., 2018) does not report how items were identified for the scale and does not include students use of social media during college adjustment. Furthermore the development of the INCA (Watson & Lenz, 2018) does not explicitly address the use of social media in college adjustment but instead considers that student expectations and sense of entitlement may have changed since the inception of the SACQ (Baker & Siryk, 1989).

Measurement issues addressed in this review are based on frameworks for assessing psychometric properties of scales documented in previous literature (Rust & Golombok, 2009; Sigerson & Cheng, 2018) and consist of the following: construction of the scale insofar as how the items were identified and rationalised for inclusion in the scale; results from a factor analysis such as a principal components analysis (PCA), exploratory factor analysis (EFA) or confirmatory factor analysis (CFA); reliability of the overall scale and subscales; and scale validity which includes content, structural, criterion/predictive, convergent and discriminant (see Table 2.1)

### ***2.5.1 Item identification and inclusion in scales***

Generally item identification is not adequately documented in the college adjustment scale development literature. Four of the eight scales that were reviewed as part of the current work have no record of how items were

identified or constructed for the scales (Baker & Siryk, 1986; Crombag, 1968; O'Donnell et al., 2018; Pennebaker et al., 1990). One of the first questionnaires that considers the social aspect of college adjustment is the CAQ (Crombag, 1968). It measures how well students have adjusted to college, more specifically, it considers whether students feel happy and satisfied in the university, regarding being a student, feelings about their course and their social network at university (Baker, 2002). Similarly, the SACQ (Baker & Siryk, 1989), is a 67 item scale and is the first scale that considers college adjustment to be a multi-faceted area of research such as academic, social, personal-emotional and institute attachment. Professor Baker passed away in 2002, however, the author of this thesis, was fortunate to be able to engage in private correspondence with a colleague of his, Professor Robert Shilkret, who explained some of the details regarding how the scale items were identified where data was collected over a number of years from students who attended counselling services. Baker and Siryk (1984) used this data to construct the original set of items for the SACQ (52 item scale) but concluded that the students who needed counselling did not always seek student counselling services or participate in the studies. Four factors of college adjustment were identified: academic, social, personal-emotional adjustment and institute attachment. In a later study (Baker & Siryk, 1986), after data collection for the 55 item scale, an additional 12 items were added to address reliability issues in the subscales, there is no record as to how these 12 items were identified. The SACQ is the most widely used college adjustment scale and is used in multiple pieces of research that examines the determinants of college adjustment and generally reports adequate reliability (Baker, 2002).

A shorter college adjustment scale that measures coping and loss during college adjustment is the CAT (Pennebaker et al., 1990). Similar to the development of the SACQ (Baker & Siryk, 1984), the authors do not report how items for the scale were identified but through private correspondence with the author in 2016, Professor Pennebaker stated that the psychometric tests of a PCA and CFA were likely carried out.

The CSEQ (Pace, 1984) measures the quality of student college experience. It is centred on student experiences that originate in college which can facilitate student engagement, learning and development. The items for the CSEQ were constructed based on previous studies carried out by the author but these studies were inaccessible (Pace, 1984). Similarly, the CLTA (Brower, 1994) assesses student performances and appraisals. The items were derived from an earlier study where the author analysed life task lists from students at two universities.

Other college adjustment scales based item construction on theoretical constructs, such as the SIQ (Pascarella & Terenzini, 1980) and the INCA (Watson & Lenz, 2018), both of which use Tinto's multi-dimensional model of academic and social integration as the theoretical framework (Tinto, 1975, 1993). The process of identification of the items for the SIQ is not evident but it is reported that the number of items was reduced to 34 after the list was reviewed for relevancy to Tinto's model (Tinto, 1975). The development of items for the INCA (Watson & Lenz, 2018), discussed the initial item pool development in light of Tinto's (1993) theory of student attrition and reduced the item pool through consultation with experts in the area.

### **2.5.2 Construct analysis, reliability and validity**

All eight college adjustment scales report adequate reliability for the subscales and for the overall scale but results of a factor analysis were not available for all scales, namely: CAQ (Crombag, 1968), CSEQ (Pace, 1984) and the CAT (Pennebaker et al., 1990).

The remaining five scales report results of either a PCA or an EFA (Baker & Siryk, 1984; Brower, 1994; O'Donnell et al., 2018; Pascarella & Terenzini, 1980; Watson & Lenz, 2018). Notably, the SACQ (Baker & Siryk, 1989) comes under criticism due to validity concerns resulting in recommendations from researchers to create a new scale based on a review of college adjustment literature (Feldt et al., 2011a; Taylor & Pastor, 2005). Taylor and Pastor (2005) examined the SACQ (Baker & Siryk, 1989) in light of a CFA with 878 cases, most of whom were in second year in university. The results of a CFA reported that the four factor model did not fit the data and the results of a subsequent EFA on the same dataset suggested that it should be a seven factor model (Taylor & Pastor, 2005). Taylor and Pastor (2005) recommended the creation of a new scale or reviewing the SACQ in light of existing theory on college adjustment. They suggested that little theory was used in the development of the SACQ. That said, at the time of development, the only published scale was the SIQ (Pascarella & Terenzini, 1980) which was developed based on theory rather than input from students. Baker & Siryk (1984) took a different approach to developing the new scale by sampling students across different years of study in one university to identify items based on actual student experiences, rather than basing item development on theory.

The method of distribution used by Taylor and Pastor (2005) differed to the original methodology used by Baker and Siryk (1986). The scale was distributed once in February to sophomore students in one university, whereas originally the SACQ was distributed in both the first term and second term to students across different years in one university (Baker & Siryk, 1984, 1986). In a further study, examining first year students only ( $N = 305$ ), Feldt et al. (2011a) also found that the four factor model did not fit. They proposed that items that failed to load on any factor should be removed from the scale and that the four factor model should be rejected, in contrast to Taylor and Pastor (2005), the results from an EFA suggested that a six factor model would better suit the data. However, this recommendation to change the SACQ was not conducted because both authors of the SACQ had since passed away.

There is evidence of adequate model fit for the two factors on the INCA scale (Watson & Lenz, 2018): 'Supportive network' and 'Belief in self'. However, the prospect that a CFA moves to an EFA once there are any post-hoc modifications (Byrne, 2016) is not acknowledged in the validation of the INCA. The evidence of adequate model fit was accomplished once items were removed from the model and other items covaried, the total number of modifications made to the final model is not reported (Watson & Lenz, 2018). The development of the INCA refers to the multi-faceted construct of college adjustment when the two identified factors consider social support and self-belief which suggests that interpersonal and social skills are imperative in adjusting to college. However, convergent validity is measured by the correlation coefficients between the INCA and the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988) and the Academic Self-

Concept Scale (ASCS; Reynolds et al., 1980) but not with an established college adjustment questionnaire. Similarly the New College Adjustment Questionnaire (O'Donnell et al., 2018) reported adequate model fit statistics when post-hoc modifications had been conducted.

The review of eight college adjustment scales suggests adequate results for at least one of the validity tests of convergent or predictive validity (see Table 2.1). From the outlined scale development studies and their use, it would appear that there is often an absence of construct validation of the college adjustment scales. Construct validity is important because it determines how well a scale measures a specific construct (Tabachnik & Fidell, 2014). It is usually measured by examining the correlation coefficients between two scales to determine if they are measuring a similar construct. However, construct validity appears to be absent or inaccurately reported, in college adjustment scale development literature for multi-faceted scales.



Table 2.1

*Summary of college adjustment scales*

Scale	Authors	Year	N	Item Construction	No. Items	Reliability: Cronbach's Alpha	FA	Model Fit & Validity Statistics
College Adaptation Questionnaire (CAQ)	Crombag	1968	X	X	18	$\alpha = .83$	X	X
Student Involvement Questionnaire (SIQ)	Pascarella & Terenzini	1980	763	Tinto (1975)	34	Peer-group interactions $\alpha = .84$ ; Interactions with faculty $\alpha = .83$ ; Faculty concern for student development & teaching $\alpha = .82$ ; Academic & intellectual development $\alpha = .74$ ; Institutional & goal commitments $\alpha = .71$	PCA	X
College Student Experiences Questionnaire (CSEQ)	Pace	1984, 1990	3000+	previous studies by Pace	150+	The Quality of Effort scales $\alpha$ range between $\alpha = .74$ to $\alpha = .92$ , the College Environment factor $\alpha$ range between $\alpha = .70$ to $\alpha = .75$ , & the Estimate of Gain factor $\alpha$ range between $\alpha = .78$ to $\alpha = .87$	X	X
Student Adaptation to College Questionnaire (SACQ)	Baker & Siryk	1984, 1986	216 163	X	67	For 1984 & 1986: SACQ: $\alpha = .91$ & $.92$ ; academic $\alpha = .82$ & $\alpha = .87$ ; social $\alpha = .88$ & $\alpha = .88$ ; personal/emotional $\alpha = .82$ & $\alpha = .79$ ; & attachment $\alpha = .89$ & $\alpha = .86$	EFA	Multiple tests carried out to demonstrate convergent, predictive validity (Baker, 2002)

Scale	Authors	Year	N	Item Construction	No. Items	Reliability: Cronbach's Alpha	FA	Model Fit & Validity Statistics
College Life Task Assessment Instrument (CLTA)	Brower	1994	587	Analysis of life-task lists from 252 students in a previous study	35	Nine subscales concerning time spent on university related activities $\alpha = .69$ and non-university related activities $\alpha = .70$ ; performances and appraisals related to "forming an identity" $\alpha = .74$ ; "family contact" $\alpha = .82$ ; "academic achievement (grades)" $\alpha = .71$ ; "establishing future goals" $\alpha = .87$ ; "Establishing friendships" $\alpha = .89$ ; "health and fitness" $\alpha = .56$ ; and "Importance of interpersonal relationships (affiliation)" $\alpha = .50$ ; overall scale $\alpha = .73$	PCA	X
College Adjustment Test (CAT)	Pennebaker et al.	1990	547	X	19	Overall scale $\alpha = .79$ , reliability for subscales is not reported	X	X
The College Adjustment Questionnaire	O'Donnell et al.	2018	301	Not reported	14	Educational Functioning $\alpha = .89$ ; Relational Functioning $\alpha = .86$ ; & Psychological Functioning $\alpha = .79$	EFA & CFA	Items were removed post-hoc to improve model fit. Convergent validity with the SACQ: Academic/educational: $r = .65$ ; social /relational $r = .67$ ; emotional/psychological $r = .69$ . RMSEA = .07; CFI = .94; TLI = .93

Scale	Authors	Year	N	Item Construction	No. Items	Reliability: Cronbach's Alpha	FA	Model Fit & Validity Statistics
								Supportive Network: $\chi^2(8) = 14.03$ , $p = .08$ . CMIN/DF = 1.27, RMR = .01, GFI = .98, CFI = .99, RMSEA = .06. Belief in Self: $\chi^2(18) = 27.47$ , $p = .07$ , CMIN/DF = 1.52, RMR = .02, GFI = .97, CFI = .97, RMSEA = .05. Correlation analysis between Supportive Network & MSPSS: $r = .62$ , $p < .01$ ; Belief in Self & ASCS $r = .48$ , $p < .01$ (Watson & Lenz, 2018, p. 9-10)
Inventory of New College Student Adjustment (INCA)	Watson & Lenz	2018	474	Tinto (1993)	14	Supportive Network $\alpha = .83$ ; Belief in Self $\alpha = .77$	CFA	

<sup>a</sup> "X" = Not documented in research

### **2.5.3 Summary of review**

It would appear from the considerations outlined thus far that for many of the college adjustment scales, there were issues surrounding the development and validation of the scales. Scale development literature for four out of the eight scales omitted the procedure on how items were identified for inclusion in the scale: SACQ (Baker & Siryk, 1986), CAQ (Crombag, 1968), CAT (Pennebaker et al., 1990) and the College Adjustment Questionnaire (O'Donnell et al., 2018). Furthermore, the SIQ (Pascarella & Terenzini, 1980) and the INCA (Watson & Lenz, 2018) were theory based and did not seem to consider student input. Through private correspondence, it emerged that the SACQ and CAT used data from student feedback and interviews to construct the items (Baker & Siryk, 1984, 1986; Pennebaker et al., 1990). Two of the scales were tested using a CFA but inaccurate results were reported with regard to model fit statistics (O'Donnell et al., 2018; Watson & Lenz, 2018). The remaining literature on the development of college adjustment scales did not report model fit statistics, but all reported results of a factor analysis (PCA or EFA) and scale reliability. Other validation tests such as criterion, convergent, discriminant and incremental were reported and deemed reliable and appropriate for the uptake of the scales (Table 2.1).

This review of college adjustment scales indicates that most of the items included in scales did not stem from rigorous development and testing, and that any study considering college adjustment in the current climate should review and update the measures in this respect. Moreover, the scales are somewhat outdated in relation to item inclusion and the omission of social media use. The most recent scales were developed in 2018 but did not include aspects of social

media use (O'Donnell et al., 2018; Watson & Lenz, 2018). The most widely used scale, the SACQ was developed in 1989, 15 years before Facebook was first rolled out beyond its originating university in 2004. Thus, any study around college adjustment would need to take these factors into consideration as well as reflecting current academic, social and interpersonal challenges in relation to college adjustment.

Universities and colleges are now integrating social media use in many courses. For example, social media is used widely to welcome students in their first year, to encourage social bridging and to encourage academic group work (Risquez et al., 2013). A current gap in literature is that none of the existing college adjustment scales incorporate the use of social media or consider the role of social media on college adjustment. The following section will therefore review the social media scales that are used to measure social media use in relation to college adjustment.

## **2.6 College adjustment and social media use**

The terms Social Networking Sites (SNS) and social media are used interchangeably in literature but more specifically for the purposes of this study, “social media” will refer to social media sites such as Facebook, Instagram, WhatsApp, Snapchat, Twitter and TikTok, and the use of online social networking. In the college adjustment literature, social media scales are used to measure social media engagement and its influence on the factors of college adjustment (Gray et al., 2013), the aim of this section is to examine the use of social media by students. Measurements of college adjustment and social media will be discussed in light of construction and validation while using an adaptation of Sigerson and Cheng's (2018) framework for assessing

psychometric properties of a scale. In addition, the inclusion of scales in this review will be based on the alignment to the four factors of college adjustment as defined by Baker and Siryk's (1989) SACQ: academic, social, personal-emotional and goal commitment/institute attachment.

Currently, in order to measure the effect of social media on college adjustment, a selection of a number of social media scales would need to be distributed along with an appropriate college adjustment scale. College adjustment questionnaires are lengthy, and to use multiple social media scales to measure the effect of social media on college adjustment could result in an unwieldy questionnaire that participants would likely not be motivated to answer.

In general, the measurement tools used for social media use in these studies have not been one of the plethora of available social media scales as will be discussed in section 2.7. For the majority of studies that combined social media use and college adjustment, social media use is measured using 1) a tool developed specifically for the study usually with reliability statistics or 2) a set of questions from previous research which did not constitute either a valid or reliable scale. Measuring college adjustment is generally conducted using the SACQ (Baker & Siryk, 1989) or subscales of the SACQ, but there are studies that report measuring college adjustment without using one of the recognised scales or by using a subscale of a published scale, which will be discussed later in this section.

Therefore, the current review will consider literature on measuring the role of social media use on college adjustment in light of the scales used in research. A number of studies measure social media use in relation to aspects

of college adjustment: academic adjustment (Alaslani & Alandejani, 2020; Alshuaibi et al., 2018; Al-Qaysi et al., 2019; Cummings et al., 2006; Junco & Cotton, 2010; Junco & Cotton, 2012; Yeboah & Ewur, 2014); social adjustment (DeAndrea et al., 2012; Ellison et al., 2007; Kim et al., 2016; Madge et al., 2009; Martinez-Lopez et al., 2019; Ranney & Troop-Gordon, 2012; Yang & Lee, 2018); personal-emotional (Bano, 2019; Lin et al., 2011; Manago et al., 2012; Wohn & LaRose, 2014) and overall college adjustment (DeAndrea et al., 2012; Janković et al., 2016; LaRose et al., 2011; Whelan et al., 2020; Wohn & LaRose, 2014; Yang & Brown, 2015; Yang & Lee, 2018).

As social media sites became popular, Facebook became the most widely examined in the college adjustment literature. However, a common thread in college adjustment and social media research, is that social media scales were purposefully developed for the study at hand, perhaps because the researchers felt that their studies were specific and available social media measures did not fit the study, or because there were too few scales available at the time. In individual studies, there are no explanations regarding the preference to develop new scales. A popular approach was to pose specific questions about use, such as time spent on social media sites and the number of friends or acquaintances one holds on social media, with an aim of developing a reliable scale that examined social media use (Ellison et al., 2007, 2011; Kalpidou et al., 2011; Lin et al., 2011). Findings from studies with specific measurements suggest that Facebook use contributes towards social college adjustment and enhanced feelings of connectedness with the college, friends and family (DeAndrea et al., 2012; Lin et al., 2011; Subrahmanyam et al., 2008).

As research in the area of college adjustment and social media grew, an array of scales were used to measure college adjustment, perhaps due to the inaccessibility of college adjustment scales such as the SACQ (Baker & Siryk, 1989) and the CAS (Anton & Reid, 1991). Scales such as the academic expectations scale (Chemers et al., 2001) are used to measure academic adjustment but social adjustment is measured by scales such as the bridging social capital scale (Ellison et al., 2007). In addition, validated and reliable scales, such as the Perceived Community Social Questionnaire (PCSQ; Herrero & Garcia, 2007), showed adequate reliability and is used to assess a sense of social integration within the student community (Bano et al., 2019). In numerous studies, subscales of the SACQ (Baker & Siryk, 1989) measure specific dimensions of college adjustment, but it would appear that the interpretation of the subscales were sometimes problematic. In one such study, loneliness is a strong indicator of college adjustment and time spent on Facebook is associated with academic performance (Wohn & LaRose, 2014). However, they claimed to use the social adjustment subscale and two academic subscales of the SACQ namely, academic motivation and perceived academic performance. They did not use the full subscales and instead, used 12 items from the SACQ and integrated them as part of their questionnaire. Model fit statistics were adequate in the measurement of loneliness, Facebook use and college adjustment ( $CFI = .999$ ,  $df = 4$ ,  $\chi^2 = 4.45$ ,  $RMSEA = .02$ ). Janković et al. (2016) used the same measures as Wohn and LaRose (2014) and found that students are more likely to sacrifice academic work for time on social media. In further studies, the full scale SACQ is used in an examination of the prediction of college adjustment through social networking, where higher rates of use of



social media result in lower rates of college adjustment (Yang & Lee, 2018).

Similar to validity concerns raised previously, Alshuaibi et al. (2018) found that social media is used to enhance academic performance. Their scale is adapted from an unpublished thesis by Lindberg and Tavakoli (2013) which is not published, and therefore there is no evidence of reliability or validation.

A key issue with psychological research on social media is that scale development cannot maintain pace with the ever changing platforms and consumption of social media sites. An example is Facebook, since its inception in 2004, with minimum features such as 'The Wall' which allowed postings of photos and status updates, by 2006 it expanded its membership to workplaces and high schools (Hall, 2019). Within four years, it launched the user newsfeed, allowed tagging of friends in posts and photos, added new privacy settings, introduced the chat function and aggregated profiles of online friends (Hall, 2019). In 2009, Facebook overtook Myspace in popularity and began to encroach on Twitter regarding the newsfeed style of information (Hall, 2019). Facebook still continues to be the most popular social media site in recent years (Statista, 2020). In addition to the growth of Facebook, the social media market is witnessing exponential growth of sites such as TikTok which has gained over 800 million active users worldwide since launching in 2018 (Statista, 2020). As a possible cause of the rapid development and adoption of social media, some psychological research comes in the aftermath of the loss of active users on sites, such as Myspace, where it was found that higher rates of use of social media resulted in lower rates of college adjustment (Raacke & Bonds-Raacke, 2015). Considering that Myspace is no longer a popular social media site with a large number of active users, combined with the differences in features between

social media platforms, generalisability of the results from Raacke and Bonds-Raacke (2015) could be an issue. This could be one of the reasons why social media use scales are continuously developed in studies on college adjustment to address specific research questions and subsequently, are rarely replicated in other studies for validation purposes.

There is recent college adjustment literature that considers other social media sites, such as Twitter, Instagram, Snapchat and WhatsApp (Bayer et al., 2016; Osatuyi & Passerini, 2016; Yang & Lee, 2018) where Twitter is related to higher student engagement and better performance (Osatuyi & Passerini, 2016) and Snapchat has lower associations with college adjustment and higher levels of jealousy (Bayer et al., 2016; Utz et al., 2015). However, research in this area is not without construct and validation concerns. In an earlier study, Utz et al. (2015) reports that Snapchat elicits higher levels of jealousy than Facebook, where questions examining motivations for Facebook and Snapchat use are based on a questionnaire that is neither a reliable nor valid scale, rather, it is a series of questions about Facebook developed by Roesner et al. (2014) that include questions like “I mainly use Facebook/Snapchat to keep in touch with family and friends”. In addition the Facebook Jealousy Scale (Muisse et al., 2009), which shows no record of a CFA but reports adequate reliability (Cronbach’s Alpha = 0.93), was adapted to measure jealousy on Snapchat, by substituting the term “Facebook” with “Snapchat”, the scale includes questions such as “if your partner sends pictures of him/herself with a previous romantic or sexual partner”.

Other studies use reliable scales such as the FBI (Ellison et al., 2007) to measure the use of WhatsApp on students’ well-being, where “Facebook” is

substituted for “WhatsApp” and findings suggest that WhatsApp is significantly correlated with social bonding but not with social bridging (Bano et al., 2019). Furthermore, WhatsApp is found to be a useful tool for fast communication but can have a negative impact on education (Sarker, 2015). Additionally, Instagram correlates negatively to college adjustment for those who use it to connect with strangers in association with using other social media sites (Yang & Lee, 2018). A study on the effect of Instagram on social college adjustment suggests that it is used for maintaining social contact, sharing and seeking personal information (Malay, 2019).

Thus far, this review has revolved around self-report measures. Self-report measures are associated with methodological issues. For example, Krosnick and Presser (2009) outline the following: acquiescence (the tendency to always agree or disagree with something), social desirability bias (a way in which the participant wants to be viewed), recall error (lack of comprehension of the question and memory lapse) and fatigue (if the questionnaire is long).

It is therefore important to note that not all college adjustment and social media research is based on self-report questionnaires. Some qualitative studies examined how social media such as WhatsApp and Twitter affect student academic performance. Findings include that the active use of Twitter and discussion forums on Moodle (an opensource virtual learning environment) positively relates to student performance (Osatuyi & Passerini, 2016). Whereas WhatsApp can be a burden because it takes up too much of students’ time and possibly reduces the amount of time that could be spent on academic challenges (Baishya & Maheshwari, 2020; Yeboah & Ewur, 2014). There is however an alternative argument, namely that the benefits of use outweigh the

negative impact, and that students generally feel that WhatsApp is important for information pertaining to college such as exams, holidays and other day to day information (Baishya & Maheshwari, 2020). Currently, WhatsApp is found to be the most used social media platform amongst students in Oman and Ghana (Al-Qaysi et al., 2019; Asiedu & Badu, 2017). These findings echo previous results where higher levels of instant messaging and multi-tasking are associated with lower academic performance and are considered to be a distraction in getting work done (Junco, 2010; Junco & Cotton, 2010).

It is worth noting that not all social media use should be considered to have a negative impact on college adjustment. Social media has also been shown to have a positive effect on students who are socially competent and who can forge and maintain friendships online and is positively associated with the social aspect of college adjustment (Yang & Brown, 2015; Yang & Lee, 2018). Where social college adjustment consists of meeting new people, forming new friendships and networks whilst maintaining existing relationships such as with family or friends from home, social media sites allow students to simultaneously manage friendships online and improve social adjustment (Baker, 2002; DeAndrea et al., 2012; Kim et al., 2016; Lin et al., 2011; Madge et al., 2009; Martinez-Lopez et al., 2019). Interestingly, regarding maintaining friendships with off-campus friends, the research findings are mixed. Some research suggests that maintaining relationships with off-campus friends frequently over multiple social media sites has a negative effect on social college adjustment (Yang & Lee, 2018) whereas earlier studies suggest that online contact with off-campus friends can enhance psychological well-being

when students find it difficult to socialise on campus (Ranney & Troop-Gordon, 2012).

Overall, there are validation concerns with social media and college adjustment scales. This could be a reason why findings in the area are varied where some research suggests that social media use is positively associated with college adjustment (Gray et al., 2013; Martinez-Lopez et al., 2019; Whelan et al., 2020) and others contradict these findings (LaRose et al., 2011; Raacke & Bonds-Raacke, 2015; Yang & Lee, 2018). One of the key findings from research is that the use of social media does not always have a positive association with college adjustment, where those who report higher use tend to report lower levels of college adjustment factors (LaRose et al., 2011; Raacke & Bonds-Raacke, 2015; Wohn & LaRose, 2014; Yang & Lee, 2018). Generally, social media is perceived as useful for social support in maintaining contact with friends from the past, possibly to avoid loneliness which can have a negative effect on college adjustment. Social media use seems to be beneficial for social adjustment and not necessarily overall college adjustment where students may sacrifice academic endeavours for time with online friends (Madge et al., 2009; Manago et al., 2012; Wohn & LaRose, 2014; Yang & Brown, 2015).

## **2.7 Overview of existing social media use scales**

Throughout social media literature in relation to college adjustment, there is one common approach, social media measurements are mainly study specific and could contribute towards the differences in findings in research in the area. As part of this review of literature, there is merit in considering a short review of the development of social media measurement scales to ascertain how they are

validated and if the differences in findings could be attributed to issues within the scales themselves.

Sixteen social media measurement scales were selected on the basis of potential relevance for assessing the effect of social media use on college adjustment for undergraduate students. The subscales and items were reviewed for relevance to the four factors of college adjustment (Baker & Siryk, 1989): academic, social, personal-emotional and institute attachment (see Table 2.2.)

Previous literature highlights development and validation concerns of social media scale development. It has, for example, raised concerns around areas such as item construction, factor analysis as well as other validation tests such as convergent, discriminant and criterion being inconsistently reported and somewhat problematic (Sigerson & Cheng, 2018). Other literature recommends steps in scale development and recognise that the approach to scale development is not standardised (Boateng et al., 2018; Carpenter, 2018). The current review will now outline an exploration of an analysis of nine social media scales in light of procedures used to design, develop and validate the scales. In total, 16 scales are noted in this review but seven of the selected scales were analysed by Sigerson and Cheng (2018) namely:

- the Facebook Intensity Scale (FBI; Ellison et al., 2007)
- the Facebook Questionnaire (Ross et al., 2009)
- the Social Media Use Integration Scale (SMUIS; Jenkins-Guarnieri et al., 2013)
- the Media and Technology Usage and Attitudes Scale (MTUAS; Rosen et al., 2013)

- the Impact of Students Social Network Use scale (Topaloglu et al., 2016)
- the Social Networking Time Usage Scale (SONTUS; Olufadi, 2016)
- the Psycho-Social Aspects of Facebook Use (Bodroža & Jovanović, 2016)

The review of social media scales will be structured as follows: item construction, construct analysis and validity tests.

Table 2.2

*Summary of social media use scales and their relevance to college adjustment*

Scale	Authors	Year	Description	A	S	P-E	I
ISCS	Williams	2006	Measures social capital online and offline		√		
Facebook Intensity Scale	Ellison et al.	2007	Measures Facebook usage based on the number of Facebook friends and time spent on Facebook		√		√
The Facebook Questionnaire	Ross et al.	2009	Measures Facebook use, attitudes and privacy behaviour		√		√
The Facebook Intrusion Questionnaire	Elphinston & Noller	2011	Measures how Facebook may disrupt personal lives and may negatively affect relationship satisfaction		√		√
The Social Media Use Integration Scale	Jenkins-Guarnieri et al.	2013	Measures the integrations of social behaviour and daily routines of users along with the importance of an emotional connection to this use		√		
The Media & Technology Usage & Attitudes Scale	Rosen et al.	2013	Measures usage across a wide variety of technologies and platforms along with media usage behaviours		√		
The Social Media Motivations Scale	Orchard et al.	2014	Measures motivations behind social media use	√	√	√	√
The Facebook Relationship Maintenance Behaviours Scale	Ellison et al.	2014	Measures how Facebook is used to maintain social relationships		√		

Scale	Authors	Year	Description	A	S	P-E	I
The Impact of Student's Social Network Use Scale	Topaloglu et al.	2016	Measures social network use, the purposes and preferences of users		✓	✓	
Social Networking Time Usage Scale (SONTUS)	Olufadi	2016	Measures time spent on social media sites		✓	✓	
The Psycho-Social Aspects of Facebook Use (PSAFU)	Bodroža & Jovanović	2016	Measures the psychological processes of Facebook use		✓		
The Social Media Disorder Scale	Van den Eijnden et al.	2016	Measures social media disorder	✓	✓		
The Social Networking Fatigue Scale	Lee et al.	2016	Predicts overload that results in stress and fatigue related to SNS usage	✓	✓	✓	
The Social Media Addiction Scale (Chinese)	Liu & Ma	2018	Measures social media addiction specifically for the Chinese emerging adults		✓	✓	
The Friendship Quality on Social Network Sites Questionnaire	Verswijvel et al.	2018	Measures the quality of friendships based on satisfaction, companionship, help, intimacy and self-validation		✓	✓	
The Social Networking Sites Usage and Needs Scale (SNSUN)	Ali et al.	2020	Measures patterns of use of SNSs and the needs for SNS usage		✓		

<sup>a</sup> A=Academic, S=Social, P-E=Personal-Emotional, I=Institutional Attachment.

### 2.7.1 Item identification and inclusion in scales

A mixture of methods is used for identifying items for inclusion in social media scales (Table 2.3), such as adapting items from existing scales (e.g. the Facebook Questionnaire), primary research (e.g. the Media, Technology and Usage Scale) and previous literature (e.g. the Social Media Motivations Scale). In contrast to the college adjustment literature, literature in the area of social media scale development includes methods by which items are identified and constructed and furthermore the rationalisation for inclusion in the scale are normally justified based on expert opinion or literature in the area. The following review of item construction will be broken down into: item construction based on existing scales; and item construction based on primary research and theory.



### **2.7.1.1 Item construction based on existing scales.**

The practice of adapting existing scale items to construct a new scale is common in psychometric scale development and validation (Bodroža & Jovanović, 2016; Elphinston & Noller, 2011; Jenkins-Guarnieri et al., 2013; Ross et al., 2009; Sigerson & Cheng, 2019). Furthermore there are validation concerns that need to be considered such as ensuring that a stable scale is used as a foundation for new research (Sigerson & Cheng, 2018).

Increasingly, social media scale research bases some items on existing scales that have no reported validation results or the factor structure is unstable. For example, the FBI (Ellison et al., 2007) measures one construct and has good reliability where Cronbach's  $\alpha = .81$  with no record of a CFA, but it is used in studies to measure the impact of Facebook use on social college adjustment (Gray et al., 2013). As noted in Sigerson and Cheng (2018), the Facebook Questionnaire (Ross et al., 2009) used all of the items from the FBI (Ellison et al., 2007) and is a 28 item scale but a CFA was carried out on only 12 items. The overall scale shows good internal reliability (Cronbach's  $\alpha = .882$ ). The Facebook Questionnaire is highly correlated with the FBI (Ellison et al., 2007) which suggests that they may be measuring the same construct, this could be due to using the same items in both scales. Along with the Internet Addiction Test (Young, 1998) and consultation with Facebook users, the Facebook Questionnaire is used as a basis for item construction for the Psycho-Social Aspects of Facebook Use (PSAFU; Bodroža & Jovanović, 2016). The PSAFU measures the psychological processes associated with Facebook use. Neither the Facebook Questionnaire (Ross et al., 2009) nor the PSAFU (Bodroža & Jovanović, 2016) are used in previous college adjustment literature.

However, the Facebook Questionnaire (Ross et al., 2009) is used to examine personality and social media use (see section 2.4.1).

Further studies adapted combined items from the FBI (Ellison et al., 2007) and the Facebook Questionnaire (Ross et al., 2009). For example, the Social Media Use Integration Scale (SMUIS; Jenkins-Guarnieri et al., 2013) measures the integrations of the social behaviour and daily routine of users along with the importance of, and emotional connection to, this use. Some SMUIS items were constructed as an adaptation to the FBI (Ellison et al., 2007) and the Facebook Questionnaire (Ross et al., 2009) along with items that were identified by experts in the field. The SMUIS (Jenkins-Guarnieri et al., 2013) has not been used in the college adjustment literature or personality literature but it is important to note validation concerns of these scales with a view of justifying discarding their use during the current thesis.

Results from research suggest that some item construction is based on scales that were not necessarily related to social media measurement. An example is the Facebook Intrusion Questionnaire (FIQ; Elphinston & Noller, 2011) which investigates the overlaps between offline and online worlds and how Facebook intrusion may disrupt personal lives and be associated with relationship dissatisfaction. The eight item scale is based on two scales: Behavioural Addiction Components (Brown, 1997) and the Mobile Phone Involvement Questionnaire (Walsh et al., 2010). Similarly, the Social Media Disorder Scale (SMD; Van den Eijnden et al., 2016) is based on the Diagnostic and Statistical Manual of Mental disorders (DSM-IV) and the diagnostic criteria for Internet Gaming Disorder (IGD; Lemmens et al., 2015). Finally, the Social Networking Service Fatigue Scale (Lee et al., 2016) predicts overload that

results in stress and fatigue related to social networking use. Cognitive overload is considered in previous research where the findings suggest that overload can affect academic adjustment for students (Whelan et al., 2020), especially in efforts to meet the need to belong by establishing multiple online social identities (see section 2.2). Item construction is based on existing scales that consider jobs, organisations, job satisfaction, job redesign, job control and social support in job roles (Cho et al., 2011; Daft & Macintosh, 1981; Karasek, 1979; McKinney et al., 2002; Van Yperen & Hagedoorn, 2003). In all cases, inclusion of these items is without a clear account of how items are adapted to suit the social media scale.

In some scale development research, existing scale items are adapted by simply changing a term in the item. This is not common practice but one such example is the Social Networking Site Addiction Scale (SNSAS; Lian et al., 2018). It measures social networking sites use and its relationship with procrastination. The scale is adapted from the FBI (Ellison et al., 2007) where the term “Facebook” is replaced with “social networking sites”.

#### **2.7.1.2 Item construction based on primary research and theory.**

Few of the reviewed scales used data from interviews in the process of identifying items. One such example is The Media and Technology Usage and Attitudes Scale (MTUAS; Rosen et al., 2013), the items were derived from literature, focus groups and pilot studies. Similarly, items for the Impact of Student’s Social Network Use Scale (ISSNU; Topaloglu et al., 2016) were identified from student data in response to a series of open-ended questions. It

measures the purpose of using social networks and the preferences between social life and social networks by university students.

Other scale development focussed solely on a theoretical framework, such as the Social Media Motivations Scale (Orchard et al., 2014), although there is no record of its use in the college adjustment literature. A uses and gratifications framework (U&G; Katz et al., 1974) is used to examine if personality, age and gender were predictors of social media use motivations. One of the issues with scales that are developed under the U&G framework is that they are rarely validated beyond a PCA or an EFA. Generally, scale items are developed based on previous scales that have not reported results of further validation tests (such as a CFA), and without consultation with potential users or experts in the area (Alhabash & Ma, 2017; Chen, 2011; Orchard, 2014).

### **2.7.1.3 Summary**

In summary, many of the social media scales address content and face validity by using a panel of experts and users of social media, to review items before collecting data. In some cases, items were constructed solely on interviews and focus groups (Olufadi, 2016; Topaloglu et al., 2016), items were added after expert consultation (Bodroža & Jovanović, 2016; Jenkins-Guarnieri et al., 2013; Rosen et al., 2013) and some items were removed after consultation (Ali et al., 2020).

### **2.7.2 Construct analysis (factor analysis) and scale reliability**

Of the 16 social media measurement scales, only 10 reported results from a CFA or structural equation modelling (SEM) statistics. Whilst this is good

practice in ensuring construct validity, there are validity concerns surrounding how factor analysis results are reported in literature.

In some cases, results were interpreted as an adequate model fit when the results did not reveal even a minimally good fit. For example, Jenkins-Guarnieri et al. (2013) reported an adequate model fit for the SMUIS after a post-hoc removal of three items which Sigerson and Cheng (2018) suggest reveals stability issues with the factor structure. The model fit statistics included a significant  $p$ -value which suggests an inexact fit where CFA literature suggests that a non-significant  $p$ -value is preferable although it can be affected by sample size, nonnormality of data or complex models (Byrne, 2016). In addition, any post-hoc changes to a CFA means that the analysis becomes an EFA (Byrne, 2016; Tabachnik & Fidell, 2014). Similarly, Lee et al. (2016) reported that a CFA was conducted on the Social Networking Service Fatigue scale but there were no available results in the literature. The Social Networking Sites Usage and Needs Scale (SNSUN; Ali et al., 2020) report that the CFA results confirm that the scale is not psychometrically sound, however this scale is not used in further research.

Sigerson and Cheng (2018) reported findings regarding the PSAFU (Bodroža & Jovanović, 2016) where results from a CFA reveal that the model did not fit the data. Seventeen items were removed but the long version of 43 items was retained which suggests an unstable factor structure. The authors argue that the 43 item scale represents more detail of psycho-social aspects of Facebook use. While the authors acknowledge that this is not psychometrically sound, a factor analysis can be considered subjective (Tabachnik & Fidell, 2014) and therefore the PSAFU was published for general use.

As with a lot of psychology research that aims to capture rapidly changing patterns of Internet behaviour, there is a trend of rapid development of social media scales in college adjustment research which has led to the continuation of problematic use of scales that have validity issues. While some research suggests progressive findings with regard to social media and its role in college adjustment, in some cases social media measurement tools used in these studies are not published or are inaccurately reported as valid.

### ***2.7.3 Convergent, discriminant, criterion, predictive analysis***

Unlike college adjustment scales, convergent and discriminant analysis statistics were reported for most of the social media scales that were considered in this review. Internal convergent testing demonstrated that subscales were correlated and that the scales measured what was intended (see Table 2.3).

Table 2.3

*Summary of social media scales with reliability and validity results*

Scale	Authors	Year	N	Construct	No. Items	Reliability: Cronbach's Alpha	FA	Model Fit Statistics
Internet Social Capital Scale	Williams	2006	527	Based on Putnam (2000) theory of social capital	20 items for 2 scales (online and offline)	Online: Bonding $\alpha = .896$ ; Bridging $\alpha = .841$ ; Offline Bonding $\alpha = .859$ ; bridging $\alpha = .848$	FA & CFA	Online: NNFI=.85 GFI=.88 PR=.89 RMSEA=.08. Offline: NNFI=.85 GFI=.90 PR=.89; RMSEA=.08 (Williams, 2006, p. 605)
Facebook Intensity Scale	Ellison et al.	2007	286	Not reported	8	Overall $\alpha = .83$	X	X
The Facebook Questionnaire	Ross et al.	2009	97	Based on FBI (Ellison et al., 2007)	28	Labelled attitudes $\alpha = .85$ and online sociability functions $\alpha = .74$	PCA	X
The Facebook Intrusion Questionnaire	Elphinston & Noller	2011	342	Based on the Behavioural Addiction Components (Brown, 1997) & The Mobile Phone Involvement Questionnaire (Walsh et al., 2010)	8	Overall $\alpha = .85$	PCA	X
The Social Media Use Integration Scale	Jenkins-Guarnieri et al.	2013	627	A mix of the Facebook Intensity Scale (Ellison et al., 2007) and the Facebook Questionnaire (Ross et al., 2009), combined with expert feedback	10	Overall $\alpha = .914$ ; social integration and emotional connection (SIEC), $\alpha = .893$ ; integration into social routines (ISR), $\alpha = .828$	EFA & CFA	RMSEA =0.075, CFI = 0.96, TLI=.95

Scale	Authors	Year	N	Construct	No. Items	Reliability: Cronbach's Alpha	FA	Model Fit Statistics
The Media and Technology Usage and Attitudes Scale	Rosen et al.	2013	942	Based on literature, focus groups & pilot studies	60	Smartphone usage $\alpha = .93$ ; General Facebook usage $\alpha = .97$ ; Internet searching $\alpha = .91$ ; E-mailing $\alpha = .91$ ; media sharing $\alpha = .84$ ; text messaging $\alpha = .84$ ; video gaming $\alpha = .83$ ; online friendships $\alpha = .83$ ; Facebook friendships $\alpha = .96$ ; phone calling $\alpha = .71$ ; Television viewing $\alpha = .61$ ; positive attitude $\alpha = .87$ ; Anxiety and dependence $\alpha = .83$ ; negative attitude $\alpha = .80$ ; multitasking preference $\alpha = .85$	EFA	X
The social media motivations scale	Orchard et al.	2014	244	Based on uses & gratifications literature	40	Procrastination $\alpha = .893$ ; freedom of expression $\alpha = .875$ ; conformity $\alpha = .805$ ; information exchange $\alpha = .817$ ; new connections $\alpha = .791$ ; ritual $\alpha = .802$ ; social maintenance $\alpha = .757$ ; escapism $\alpha = .820$ ; recreation $\alpha = .831$ ; & experimentation $\alpha = .594$	PCA	X
The Facebook Relationship Maintenance Behaviours Scale	Ellison et al.	2014	614	Based on ISCS (Williams, 2006)	5	Overall $\alpha = .901$	PCA & CFA	RMSEA = .05, CFI=1.00; GFI=.99



Scale	Authors	Year	N	Construct	No. Items	Reliability: Cronbach's Alpha	FA	Model Fit Statistics
The Impact of Student's Social Network Use Scale	Topaloglu et al.	2016	1005	Survey of students	13	Overall $\alpha = .882$ ; the aims of social network use $\alpha = .874$ ; & social network communication preferences $\alpha = .858$	PCA & EFA	X
Social Networking Time Usage Scale (SONTUS)	Olufadi	2016	> 1,800	Based on literature & a panel of experts	29	relaxation and free periods $\alpha = .91$ ; academic related periods $\alpha = .89$ ; public places related use $\alpha = .85$ ; stress related periods $\alpha = .86$ ; & motives for use $\alpha = .83$	PCA & CFA	RMSEA = .04, CFI = .95, TLI = .94
The Psycho-Social Aspects of Facebook Use (PSAFU)	Bodroža & Jovanović	2016	804	Based on the Facebook Questionnaire (Ross et al., 2009) & the Internet Addiction Test (Young, 1998)	26 items (43 items long version)	Internal consistency of factors range between $\alpha .76$ (virtual self) and $\alpha .92$ (compensation)	EFA & CFA	RMSEA = 0.40 for 26 item scale, not reported for the 43 item "long" scale
The Social Media Disorder Scale	Van den Eijnden et al.	2016	2,198	Based on Internet Gaming Disorder (IGD, Lemmens et al., 2015)	9 items (27 items long version)	Three samples of data 1) $\alpha = .81$ ; 2) $\alpha = .76$ ; 3) $\alpha = .82$	EFA & CFA	Samples: 1) RMSEA = 0.000 & CFI = 1.000; 2) RMSEA = .041 & CFI = .997 3) RMSEA = .041 & CFI = .989
The Social Networking Fatigue Scale	Lee et al.	2016	201	Adapted scales for job support, control, redesign, satisfaction that were validated in other studies (Cho et al., 2011; Daft & Macintosh, 1981; Karesek, 1979; McKinney et al., 2002; Van Yperen & Hagedoorn, 2003)	32	SNS fatigue $\alpha = .86$ ; system feature overload $\alpha = .82$ ; system pace of change $\alpha = .87$ ; communication overload $\alpha = .82$ ; information relevance $\alpha = .90$ ; information overload $\alpha = .87$ ; information equivocality $\alpha = .87$ ; & system complexity $\alpha = .90$	EFA & SEM	RMSEA was not reported. AVE & CR values, all above .6

Scale	Authors	Year	N	Construct	No. Items	Reliability: Cronbach's Alpha	FA	Model Fit Statistics
The Social Media Addiction Scale (Chinese)	Liu & Ma	2018	619	Based on the Internet Addiction Test (Young, 1999), the Facebook Addiction Scale, the Internet Gaming Disorder Scale (Lemmens et al., 2015). The terms "Internet", "Facebook" and "Internet gaming" were replaced with "social media"	28	Preference for online social interactions $\alpha = .83$ ; mood alteration $\alpha = .84$ ; negative outcomes and continued use $\alpha = .83$ ; compulsive use/withdrawal $\alpha = .86$ ; salience $\alpha = .79$ ; relapse $\alpha = .82$	EFA & CFA	RMSEA = .042, CFI = .929, TLI = .935
The Friendship Quality on Social Network Sites Questionnaire	Verswijvel et al.	2018	1,087 (1,695 friends-hips)	Adapted the MQF-FF/MQF-RA/ - focussed on dimensions reflecting positive friendship features and adolescents feelings for a friend	16	Satisfaction $\alpha = .93$ ; companionship $\alpha = .94$ ; help $\alpha = .91$ ; intimacy $\alpha = .94$ ; & self-validation $\alpha = .87$	EFA & multiple CFA's across 2 age groups (12-15 yrs and 16-19 yrs)	model fit for 5 factor model RMSEA = 0.07, CFI = 0.98, TLI = 0.97
The Social Networking Sites Usage and Needs Scale (SNSUN)	Ali et al.	2020	162	Based on Motives for Facebook Use (Sheldon, 2008), Social Information Seeking (Khan, 2018), Information Seeking in Facebook (Asghar, 2015), Predictors of the Internet (Papacharissi & Rubin, 2000); Patterns of Facebook Activities (Yang & Brown, 2013)	18	Composite reliability: Diversion = .827; Cognitive needs = .826; affective needs = .824; personal integrative needs = .882; & social integrative needs = .810	EFA & SEM	RMSEA = .078, CFI = 0.861

*Note.* The table was adapted from Sigerson and Cheng (2018).

<sup>a</sup> "X" = Not documented in research.

### **2.7.4 Summary of key findings**

One of the key findings of this review is that the social media scales that are based on items of existing scales more often produce adequate model fit statistics: the Social Media Use Integration Scale (Jenkins-Guarnieri et al., 2013), the Psycho-Social Aspects of Facebook Use (PSAFU; Bodroža & Jovanović, 2016), the Social Media Disorder Scale (Van den Eijnden et al., 2016), the Social Media Addiction Scale (Chinese) (Liu & Ma, 2018), the Friendship Quality on Social Network Sites Scale (Verswijvel et al., 2018), the Social Networking Sites Usage and Needs Scale (SNSUN; Ali et al., 2020), Social Networking Addiction Scale (Lian et al., 2018). It could be postulated that this is a reason for selecting or adapting items from existing scales in social media scale development literature. However best practice in psychometric scale development acknowledges the adaptation of existing scales but recommends the combination of qualitative and quantitative while constructing items for a scale (Boateng et al., 2018; Carpenter, 2018; Rust & Golombok, 2009).

Furthermore, this review highlights validity concerns reported in other studies (Sigerson & Cheng, 2018). In addition to construct and validity issues, none of the social media scales are specific to college adjustment although some, such as the FBI (Ellison et al., 2007), have been used in the college adjustment literature. The majority of scales in this review were based on other scales that lacked validation or where results were inaccurately reported. Therefore these scales are not considered valid for use in the current study.

Aside from the methodological issues with the scales, the most widely used college adjustment scales were developed in the 1980s and 1990s and do

not consider the current challenges that face students with regard to social media use during college adjustment. There is a wide range of social media scales, the majority of which are based on Facebook use. While Facebook is still used by students, these studies omit social media sites that have gained recent popularity such as Instagram, Snapchat and WhatsApp (Bano et al., 2019; Ellis et al., 2020; Utz et al., 2015). It is therefore plausible to suggest that the student adjustment scale could be developed with a view of how social media in general has become an intricate tool used by students to adjust to college.

## **2.8 Conclusion**

The current thesis aims to explore new college adjustment issues that students experience and the role of social media in college adjustment. Currently there is a plethora of online social media platforms available to students, and theories such as U&G (Katz et al., 1974), the need to belong (Baumeister & Leary, 1995) and social identity (Serpe, 1987; Stryker & Burke, 2000; Tajfel & Turner, 1979) lend themselves to establishing and identifying groups online (Spears, 2017). In turn, social identity salience influences group norms and online behaviour (Hogg & Reid, 2006). The need to belong and social identity needs to be explored further in light of developing and validating the student adjustment scale and to shed some light on the new demands of college adjustment for undergraduate students.

The affordances of social media allows students to simultaneously maintain and establish networks which may result in managing multiple online friendships (Thomas et al., 2017) and social identities (Whelan et al., 2020). This needs to be addressed in relation to uses and gratifications of social media

and possible distractions from college adjustment facets. In addition, online group communication such as the SIDE model will be considered with regard to anonymous and non-anonymous online student group communication.

The need to belong (Baumeister & Leary, 1995) stretches across multiple friends groups including old friends to avoid friendsickness (Paul & Brier, 2001) but more recent research suggests that students tend to use social media to extend and maintain connections rather than create them (Wang et al., 2012; Yang & Brown, 2013). The sheer volume of online activity may result in academic distraction especially when attempting to manage multiple simultaneous interactions (Dunbar, 2018; Whelan, 2020). Whilst it is well documented that social media may be used to gratify a transient state (Wang et al., 2012; Yang & Brown, 2013), it is necessary to explore if social media use is an integral part of college adjustment.

Individual differences have a role to play in college adjustment and social media use. Self-efficacy is a situation specific belief in a capability to attain a goal (Bandura, 1994), but college adjustment is multi-faceted and the college adjustment literature spans years of study within academic programmes (Kalpidou et al., 2011; Taylor & Pastor, 2005). There may be multiple goals that students strive to achieve that may change over the course of an undergraduate degree. Consequently self-efficacy is liable to change over time depending on the challenges that students face. Similarly levels of self-esteem and self-regulation can be influenced by immediate context (Higgins et al., 1994). For this thesis, to develop and validate the new student adjustment scale, it is necessary to align with previous literature and use a trait based measure, such as the Big Five personality model, in order to ascertain influences on student

adjustment. Therefore state based individual differences will not be measured in this thesis.

Findings from literature on personality, social media use and college adjustment are mixed, possibly due to the range of social media measurements that are used across studies, most of which have validation concerns (Sigerson & Cheng, 2018). Research thus far, has been disjointed to an extent that there is no single scale to measure social media use as a part of college adjustment. In addition, most social media scales focus on one platform, such as Facebook, when there is evidence that the number of active users on other social media platforms is increasing (Yang & Lee, 2018). Research suggests that personality underlies student behaviour in college adjustment and social media use and is mostly measured using the Big Five model, but the combination of college adjustment, social media use and personality is understudied and will therefore be addressed in this thesis.

Previous scale development literature on the area of college adjustment and social media highlights the overall lack of validation of psychometric scales. In addition, college adjustment scales reviewed as part of this study were developed pre-social media era and need to be updated to reflect current issues experienced by students. Therefore, there is merit in considering the development of the student adjustment scale that incorporates the use of general social media use, not specifically related to one social media platform.

This review underpins the theoretical framework that will be used for this thesis to adapt best practice for scale design and development. The research question will address the issue of the role of social media on college adjustment, therefore the framework that will be used to explore this question

will be: 1) Current college adjustment issues will be identified through interviews with students to ascertain what needs to be measured as part of a new scale; 2) Items for the scale will be derived on the basis of the data from students and literature in the area of college adjustment and social media use; 3) The items will be subjected to a series of factor analyses and reliability tests; 4) The new scale will be subjected to a series of validation tests such as convergent testing with another college adjustment scale; 5) The multi-faceted construct of student adjustment will be addressed and will be examined to determine if personality impacts on college adjustment.

### **Chapter 3: Thematic Analysis of Social Media Use in College Adjustment**

The current chapter uses thematic analysis (Braun & Clarke, 2013a) to explore the use of social media in relation to college adjustment for undergraduate students, with a view to developing the student adjustment scale that incorporates social media use.

#### **3.1 Background**

In transitioning to college, first year students are required to embrace challenges that go beyond academic expectations such as navigating a complex college environment, meeting new people, establishing a new social circle and making career choices amongst others (Credé & Niehorster, 2012). It is acknowledged by educators that college adjustment is multi-faceted, the taxonomy of college adjustment is represented in the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989) and comprises of: academic, social, personal-emotional adjustment and institutional attachment.

As discussed in chapter two, the current generation of college students have access to a wide range of social media that could potentially affect college adjustment and there is merit in considering merging the two research areas to examine the role of social media use on college adjustment. In the current study, college adjustment scales and social media scales will be discussed in light of item identification to highlight potential issues in previous literature. Furthermore, literature on college adjustment issues experienced by students and their use of social media will be reviewed to inform the development of two research questions that will be addressed in this study.



### **3.1.1 College adjustment scales**

Chapter two contains a detailed review of the college adjustment scales. The process of item identification and rationalisation for inclusion in scales is not widely reported in the college adjustment literature, in fact, it appears that research seems to fall short in reporting this specific area of college adjustment scale validation. In summary, items were identified from student interview data and relevant theory (see Table 3.1).

### **3.1.2 Social media scales**

There are a number of social media scales that measure usage and engagement on social media. None of these tools specifically consider college adjustment issues and how students may use social media during the transition to college. As discussed in chapter two, there are validation concerns (Sigerson & Cheng, 2018) regarding the construction of social media scales which seem to be based on existing scales that may or may not have been validated. Additionally, there are potential issues in the original scales such as the identification of items, rationalisation for inclusion of items were, at times, not reported when developing social media scales (see Table 3.2). For the current study, it was deemed necessary to speak to students directly and obtain information regarding social media use during college adjustment.

Table 3.1

*Summary of item identification in the college adjustment literature*

Scale	Author	Year	Description	Item Construction	Scale measurement	No. Items
College Adaptation Questionnaire (CAQ)	Crombag	1968	Assess adjustment to college life	not reported	7 point Likert scale	18
Student Involvement Questionnaire (SIQ)	Pascarella & Terenzini	1980	Focussed on persistence and student's relationships and perceived relationships with faculty	Based on the 5 dimensions based on Tinto's Drop Out process model.	5 point Likert scale: 5 = 'strongly agree' to 1 = 'strongly disagree'	34
College Student Experiences Questionnaire (CSEQ)	Pace	1987	Measures the benefits of student effort in using facilities and opportunities in the institution.	Based on previous studies by Pace	4 point Likert scale (1 = 'very often', 2 = 'often', 3 = 'occasionally' and 4 = 'never')	150+
Student Adaptation to College Questionnaire (SACQ)	Baker & Siryk	1986	Multi-dimensional measurement of College Adjustment	not reported	9 point rating scale, ranging at strong emphasis at one end to weak emphasis at the other	67
College Life Task Assessment Instrument (CLTA)	Brower	1994	Measures student performance and performance appraisals	Previous study by the author content analysed life task lists from 252 students at 2 universities and found 7 distinct domains of college life. Items for the CLT were developed to assess students self-report performances and appraisals. Literature used to confirm the seven task domains	not reported	35

Scale	Author	Year	Description	Item Construction	Scale measurement	No. Items
College Adjustment Test (CAT)	Pennebaker et al.	1990	Measures coping and loss in the transition to college for undergraduate students	Not reported in paper	7 point scale ranging from 1= 'not at all' to 7 = 'a great deal'.	19
College Adjustment Questionnaire (CAQ)	O'Donnell et al.	2018	Short questionnaire to measure student functioning during college adjustment	Not specified	5 point Likert scale (not true to completely true)	14
Inventory of New College Student Adjustment	Watson & Lenz	2018	Short questionnaire to measure support and self-belief during college adjustment	Using literature Tinto (1993)	4 point Likert-type scale (1 = 'strongly disagree' to 4 = 'strongly agree')	14

Table 3.2

*Summary of item identification in social media scales*

Scale	Authors	Year	Description	Item Construction	No. Items
Internet Social Capital Scale	Williams	2006	Measures offline and online social bridging and bonding	Using DDB Needham scale in Putnam (2000)	20
Facebook Intensity Scale	Ellison et al.	2007	Measures Facebook use: the number of Facebook friends and time spent on Facebook	Not reported	8
The Facebook Questionnaire	Ross et al.	2009	Measures Facebook use, attitudes and privacy behaviour	Based on the FBI which has no validity tests	28
The Facebook Intrusion Questionnaire	Elphinston & Noller	2011	Measures Facebook disruption of personal lives	Based on the Behavioural Addiction Components (Brown, 1997) and the Mobile Phone Involvement Questionnaire (Walsh et al., 2010)	8
The Social Media Use Integration Scale	Jenkins-Guarnieri et al.	2013	Measures the integrations of social media behaviour in daily routines, and measures the level of importance of an emotional connection to this use	Adaptation to FBI and the Facebook Questionnaire items and expert feedback	10
The Media and Technology Usage and Attitudes Scale	Rosen et al.	2013	Measures usage across a broad spectrum of technologies and associated attitudes to this use	Based on literature, focus groups and pilot studies	60
The social media motivations scale	Orchard et al.	2014	Measures motivations behind social media use	Based on uses and gratifications literature	40
The Facebook Relationship Maintenance Behaviours Scale	Ellison et al.	2014	Measures how Facebook is used to maintain social relationships	Not reported	5

Scale	Authors	Year	Description	Item Construction	No. Items
The Impact of Student's Social Network Use Scale	Topaloglu et al.	2016	Measures social network use, the purposes and preferences of users	Survey of students	13
Social Networking Time Usage Scale (SONTUS)	Olufadi	2016	Measures time spent on social media sites	Based on literature and a panel of experts	29
The Psycho-Social Aspects of Facebook Use (PSAFU)	Bodroža & Jovanović	2016	Measures the psychological aspects of Facebook use and objective Facebook behaviour	Based on the Facebook Questionnaire (Ross et al., 2009) and the Internet Addiction Test (Young, 1998)	26 items (43 items long version)
The Social Media Disorder Scale	Van den Eijnden et al.	2016	Measures social media disorder	Based on the diagnostic criteria for Internet Gaming Disorder (IGD)	9 items (27 items long version)
The Social Networking Fatigue Scale	Lee et al.	2016	Predicts overload that results in stress and fatigue related to SNS usage	Adapted scales for job support, control, redesign, satisfaction that were validated in other studies	32
The Social Media Addiction Scale (Chinese)	Liu & Ma	2018	Measures social media addiction specifically for the Chinese emerging adults	Based on the Internet Addiction Test (Young, 1999), the Facebook Addiction Scale, the Internet Gaming Disorder Scale (Lemmens et al., 2015). The terms "Internet", "Facebook" and "Internet gaming" were replaced with "social media"	28

Scale	Authors	Year	Description	Item Construction	No. Items
The Friendship Quality on Social Network Sites Questionnaire	Verswijvel et al.	2018	Measures the quality of friendships based on satisfaction, companionship, help, intimacy and self-validation	Adapted the MQF-FF/MQF-RA/ - focussed on dimensions reflecting positive friendship features and adolescents feelings for a friend	16
The Social Networking Sites Usage and Needs Scale (SNSUN)	Ali et al.	2020	Measures patterns of use of SNSs by users and their needs for this use	Based on Motives for Facebook Use (Sheldon, 2008), Social Information Seeking (Khan, 2018), Information Seeking in Facebook (Asghar, 2015), Predictors of the Internet (Papacharissi & Rubin, 2000); Patterns of Facebook Activities (Yang & Brown, 2013)	18

### **3.1.3 College Adjustment and Social Media**

Previous literature in the area is discussed in detail in chapter two. Prior to the accessibility of social media, college adjustment issues would have been addressed with face to face communication. In recent years the use of social media by students is commonplace in establishing and maintaining a support network, especially during college adjustment (Burke et al., 2010; DeAndrea et al., 2012; Ellison et al., 2007; Gray et al., 2013). Issues such as academic, social, personal-emotional and institute attachment have extended to online, as motives to use social media and instant messaging, where they are managed by the student in a blended approach of both online and face to face.

#### **3.1.3.1 Manage separation from old friends.**

Historically, social adjustment meant that students' social life changed and that students need to establish a new network of friends while managing old friendships, this aspect of college adjustment sits in the social adjustment subscale of the SACQ (Baker & Siryk, 1989). Paul and Brier (2001) coined the term 'friendsickness' which means that there is a preoccupation with missing friends, once there is a physical absence of old friends then friendsickness can occur. College adjustment scales have not considered online social adjustment and if the feeling of friendsickness is still pertinent for current students.

Research has shown that social media is useful for maintaining friendships (Ellison et al., 2007, 2011; Gray et al., 2013) and that this is a motivation to use social media (Grellhesl & Punyanunt-Carter, 2012; Wang et al., 2012; Yang & Brown, 2013), but that online only friendships may not necessarily strengthen and may become superficial, especially if communication is reduced to public announcements rather than direct communication between friends (McEwan,

2013). Furthermore, students tend to manage old friendships with a combination of face to face and online interactions, to both maintain old friendships and build a new network of friends (Burke et al., 2010; Ellison et al., 2007; Ellison et al., 2014; Gray et al., 2013; Yang & Lee, 2018).

### **3.1.3.2 Navigate a new environment.**

Students must navigate a new academic and social environment while adjusting to college, this falls under the umbrellas of academic adjustment and social adjustment subscales of the SACQ (Baker & Siryk, 1989). In recent years, interaction with peers extended to online social media such as WhatsApp, Facebook Messenger, and Snapchat, Instagram, Discord and TikTok where social media allows groups of friends to communicate simultaneously (Décieux et al., 2019). This blended approach of face to face and online interactions allows for multiple memberships of online and face to face groups.

According to Hutchinson et al. (2007), groups can provide a sense of identity, cohesiveness, belonging and connectedness for their members, and therefore students attempt to emulate this through using multiple online groups for different sets of friends. Furthermore Barstade (2002) found that groups are inductors of emotion and they influence moods and judgements of others and subsequently behaviour, therefore it could be suggested that friends exert some level of influence over behaviour and attitude in relation to college adjustment. Social media facilitates behavioural contagion, where bad news travels faster through social media and that group members can bond over a mutual dissatisfaction (Bosson et al., 2006; Naveed et al., 2011; Wheeler, 1966). Online interaction provides more options for students to manage and establish



friendships to improve their friend network, especially for those who may be time poor or suffer with social anxieties (McKenna & Green, 2002), therefore there is merit in exploring the effect of both online and face to face interactions on college adjustment.

### **3.1.3.3 Being an active member of the college community.**

Becoming involved with the college community as a whole, falls under the social adjustment subscale of the SACQ (Baker & Siryk, 1989) and includes the students need to belong to both the new college environment and belonging to old friend groups (Baumeister & Leary, 1995). Belongingness has fundamentally been attributed to face to face interaction where the importance of belonging for well-being is considered a predictor of academic motivation, engagement and achievement (Hausmann et al., 2007; Lewis et al., 2017; Pittman & Richmond, 2007; Walton et al., 2012; Zumbrunn et al., 2012). A sense of belonging falls under a number of the SACQ subscales: Institute attachment, social and academic (SACQ; Baker & Siryk, 1989) whereby students form connections with fellow classmates, the course and institute of study. A sense of belonging is nurtured through everyday practices and is not an immediate benefit of being a member of a group, individuals within groups need to strive towards achieving a sense of belonging through active participation (Garbutt, 2009). According to Asendorpf and Wilpers (1998), on average, young people form 10 new friendships per month during the first few months of college. Attachment to new friends increases over the first 18 months of college where these friendships were perceived as more supportive and more securely attached (Asendorpf & Wilpers, 1998; Asendorpf & Wilpers, 2000).

According to Zumbrunn (2012), academic and social support may contribute towards student belonging. A sense of belonging in a college environment is also attributed to the relationship with faculty staff. Student interaction with instructors, perceived levels of instructor interest in students and caring attitudes towards them are found to be linked to contribute towards supporting student motivation, engagement and achievement in a classroom (Hausmann et al., 2007; Zumbrunn, 2012). As friend groups move towards blended interaction involving face to face and online communication (Décieux et al., 2019), individual students who strive to achieve a sense of belonging or connection (Chen, 2011) may find that they invest more time into interacting online in order to maintain friendships or establish new friendships. The efforts to satisfy needs to establish and maintain connections (Chen, 2011; Grellhesl & Punyanunt-Carter, 2012; Katz et al., 1974) may lead to increased social media use which can be associated with social media fatigue (Dhir et al., 2018).

In light of students using social media to maintain old friendships, navigate a new environment and establish a sense of belonging in the college community, the first research question is: What is the effect of blended (online and face to face) interactions on college adjustment for students across years, courses and institutes?

### **3.1.4 New College Adjustment Issues**

College adjustment is a multi-faceted construct where students must navigate new challenges including new academic and social demands.

#### **3.1.4.1 New academic demands.**

Independent learning is linked to the perception of value of studies and educational experiences, it is considered to be part of the academic and

personal-emotional subscales of the SACQ (Baker & Siryk, 1989). Van der Meer et al. (2010) observed that first year students found it a challenge to understand the new demands of starting college such as: the level of independent work that is required; the lack of help in transitioning into a college environment and into independent study; and understanding the expectations around time management. Furthermore, Žydžiūnaitė et al. (2014) found that students develop social and leadership skills when learning independently. However, they also found that students tended to only study what is required for the assessments and that the work presented by lecturers influences their study behaviour.

In addition, social media is used to navigate new academic demands where students may use social media or instant messaging to seek information to satisfy a goal such as to start or complete an assignment (Baishya & Maheshwari, 2020). Social media facilitates students to keep in touch with classmates and peers and at times, the boundaries between social and academic are blurred by social media and instant messaging. For example, wider networks of social contacts or weak ties (Granovetter, 1973, 1982; Putnam, 2000) can provide academic support sought by students (Baishya & Maheshwari, 2020; Ellison et al., 2007).

#### **3.1.4.2 New online social demands.**

Research has shown that social media is used to establish social and academic support (Baishya & Maheshwari, 2020; Ellison et al., 2007; Gray et al., 2013) but little is reported on social media etiquette that is adhered to by students. This falls under the social and academic subscales of the SACQ (Baker & Siryk, 1989). Social media site development is rapid and student

preferences change regularly depending on an array of factors that include: peer influences to maintain or establish friendships (Ellison et al., 2007); and personal and academic information seeking (Baishya & Maheshwari, 2020; DeAndrea et al., 2012; Ellison et al., 2014; Gray et al., 2013; Malay, 2019). Furthermore, the formation of online groups could also be driven by social categorisation where individuals form a group and socially compare themselves to other groups, such as other classes, courses or institutes (Turner & Reynolds, 2012).

Whilst the benefits of using social media imply that students have an opportunity to stay in touch with old friends, or bridge relationships with new friends (Ellison et al., 2007; Ellison et al., 2014), membership of multiple online groups could potentially mean managing a number of simultaneous social interactions and identities (Iyer et al., 2009; Kramer, 2006; Serpe, 1987; Spears & Lea, 1992; Tajfel & Turner, 1979; Thomas et al., 2017). This may lead to a problematic use of social media or information overload, where students experience unlimited social interactions simultaneously that may impact aspects of college adjustment (Cao et al., 2018; Whelan et al., 2020).

For the current study, a review of current college adjustment issues is required to identify issues that emerged since the inception of college adjustment scales. Students transitioning to college may experience the same issues as their predecessors but the ubiquity of social media brings with it possible new experiences in managing friendships. Therefore, the second research question is: What new experiences must students adjust to across years, courses and institutions?

## **3.2 Current study**

The purpose of this study is to identify college adjustment challenges that students experience and how they use social media during this adjustment. The challenges will be identified by participants in this study and not solely informed by literature. The data from this study will be used to identify items for the student adjustment scale that will be developed in chapter four.

## **3.3 Method**

### **3.3.1 *Participants***

#### **3.3.1.1 Recruitment.**

Participants for the group interviews were recruited from an Irish institute through heads of departments and course lecturers. The researcher had permission from the course lecturers to approach the class groups either at the end or middle of the class. A private room was booked and participants could go straight from class to the group interview. All recruitment in the Irish institute was carried out face to face. In moving the student group to a different room specifically intended for the interviews, it is possible that the natural status of the group could have been compromised (Frey & Fontana, 1991). Participants from the Irish institute were from a range of courses offered by the institute such as business, arts, psychology and English.

Participants in the UK university signed up to the study online and gained one course credit for attending. If participants failed to turn up to the group interview after signing up, they were penalised in course credits, and this was part of the online system that was run by the department of psychology. Only psychology students participated in the UK university.

This study was designed on the premise that participants would be in the same year of study but if possible, from a range of different courses. However, it was considered to be of benefit to the study to have friends within the participant groups in order to gain insight into how they interact online and the role of social media use on college adjustment. Therefore, whilst the initial preference was across courses, the groups that were actually recruited were homogenous by course and year of study, with the exception of one group, for the purposes of observing the group dynamics and how they communicate both face to face and online. The limitations of this approach were that the students, in most cases, knew each other and there may have been a risk to confidentiality. However, participation in the group was voluntary and participants could leave at any point, in addition, each participant signed a form that agreed that they would keep all discussions confidential. The interview questions provoked interpersonal dynamics within the participating student group. Recruitment began in February 2017 and concluded in April 2017.

#### **3.4.1.2 Sample size.**

Due to ethical reasons, only those over the age of eighteen could participate in the interviews. All participants had to be undergraduate students. Thirteen group interviews and two one-to-one interviews were held with a total of 70 participants. According to Adler and Adler (2012) a broad range of 12 to 60 interviews is acceptable for one study.

Data was collected during the interview by audio recording the discussion. In an effort to preserve anonymity, participants were not given questionnaires to complete before the interviews, all that was known about the participants was the course, the year of study and the college in which they

studied. They volunteered information throughout the interview and during analysis, which was extracted from transcripts to formulate a more complete profile of the participants with pseudonyms. Data such as their feelings on course acceptance and whether or not the course was their first option were recorded as part of the participant profiles in NVivo version 11 with a view that some of this information may formulate demographic questions for the pilot questionnaire.

### **3.4.1.3 Demographics.**

Ten interviews were conducted in an Irish institute and five interviews were conducted in a UK university. Gender breakdown is as follows: 64% female ( $n = 45$ ), 36% male ( $n = 25$ ).

Participants were from different courses in the Irish institute and from psychology in the UK university. Of the total of 70 participants, nine (13%) participants attended a psychology course in the UK university, 26 (37%) attended a psychology course in the Irish institute, there were 19 (27%) business students, 10 (14%) students who attended creative courses and six (9%) attended a course on English studies.

The majority of participants were in first year in their course. The minority were in their final year. From a total of 70 participants, 37 (53%) were currently attending first year, 23 (33%) were in second year, six (9%) were in third year and the remaining four (6%) were in fourth year.

The undergraduate degree durations between the colleges differed. The Irish institute degrees are four years and the UK university are three years. Participants from the UK university were in year one and two of their study. The lack of final year students could be related to the time of year when the

interviews were held, this would possibly have been a busy time for the final year group.

### **3.3.2 Design**

This was a cross-sectional study. Thirteen group interviews were carried out across an Irish institution and a UK university, two further one-to-one interviews were conducted in the latter.

To inform the questions that form the interview protocol, research into college adjustment issues included reviewing the literature on college adjustment and social media. Further research was carried out on student forums such as the [www.thestudentroom.co.uk](http://www.thestudentroom.co.uk) and [www.boards.ie](http://www.boards.ie). Common issues were identified such as meeting new people; compatibility of the course/college with the student; homesickness; friendsickness; financial issues; and accommodation. The initial interview protocol was created based on this initial insight into college adjustment.

The interview protocol for the group interview was designed using the Interview Protocol Design Process in Guest et al. (2012): A brainstorming session between the researcher and the supervisory team resulted in the formulation of interview questions, the main areas of consideration were online behaviour and online friendships during college adjustment. The funnel approach was used in the interview protocol where questions started out broad and focussed more on the relevant areas as the interview progressed (Brenner, 2006). Positive questions were positioned before negative questions, this was designed to minimise discomfort or upset that the participant may have felt during the interview. There were nine questions in total, grouped by: general overview questions, friendships and college adjustment. The questions on



college adjustment were designed to allow participants to focus on one area and then talk about how a college online presence might impact on college adjustment issues.

During the design process, the number of questions was reduced. The main questions were edited and prompt questions were introduced to allow the researcher a prompt in the interview, if the participants were not engaging or went off the point of discussion.

### **3.3.2.1 Group Interviews.**

Participants were not given the topics prior to the discussion, data was collected through group interviews to encourage self-disclosure (Krueger & Casey, 2000). Group interaction and group dynamics were considered an integral part of the data collection because it was necessary to consider students' perspectives on the process of adjusting to college, how they use social media and how they communicate with their friends during this adjustment period (Frey & Fontana, 1991; Madriz, 2000; Mertens, 2015; Silverman, 2010). Fontana and Frey (2000) considered many variations on group interviews (see Table 3.3).

Table 3.3

*Types of group interviews and dimensions*

Type	Setting	Role of Interviewer	Question Format	Purpose
Focus Group	Formal-preset	Directive	Structured	Exploratory pretest
Brainstorming	Formal or informal	Nondirective	Very structured	Exploratory
Nominal/Delphi	Formal	Directive	Structured	Pretest exploratory
Field, natural	Informal spontaneous	Moderately nondirective	Very structured	Exploratory phenomenological
Field, formal	Preset, but in field	Somewhat directive	Semi-structured	Phenomenological

<sup>a</sup> Source: Frey and Fontana (1991, p.184).

The group interviews were held on campus, they were semi-structured and the interviews were somewhat directed by the researcher in an attempt to elicit sharing of experiences and opinions amongst the participants (Kreuger & Casey, 2000). Whilst Frey and Fontana (1991) postulate that the semi-structured group interview (field, formal) is phenomenological in nature, other qualitative researchers indicate that it is the dominant form for exploratory qualitative interviews (Braun & Clarke, 2013a). Therefore, semi-structured group interviews will be used to explore the new college adjustment issues experienced by students.

### **3.3.3 Materials**

#### **3.3.3.1 Administration of the interview protocol.**

Participant engagement with questions was encouraged by the researcher throughout the interviews. Participants who remained silent were encouraged to speak by the researcher throughout the interviews by asking general questions and enquiring if participants would like to expand on points

made. In addition, participants who remained quiet were specifically asked their opinion on questions.

The first two interviews were used as a pilot to test the questions. They were held on the same day with two groups of first year students with different demographics (i.e. the members of one group did not attend college straight from school and the other group was mixed, some members attended college straight from school and others were mature students). The questions were not changed after these interviews. It was found that the different questions appealed to different types of students and to tweak or change the questions may have resulted in isolating some students.

#### **3.4.3.2 Data saturation.**

The sample size was influenced by an iterative process until data saturation was achieved (Braun & Clarke, 2013a). As the interviews progressed, further coding was no longer feasible, similar themes and sub-themes recurred. According to Fusch and Ness (2015), there is no clear guideline on how many interviews are enough, the data should be rich and thick. The duration of the interviews ranged from 18 to 48 minutes.

#### **3.3.4 Procedure**

Ethical approval was granted in both the Irish institute and the UK university (Appendix A).

Prior to participating, candidates received an invitation and an Information Sheet detailing: purpose of the study; invitation to participate; statement that participation is purely voluntary and confidential; that they can opt to remove the data at any point before a stated date. The data collection period ran over the originally planned timeframe. The stated date to allow

participants to request removal of their data changed but is not reflected in the ethics documentation. The researcher was present at all data collection sessions and the participants were verbally informed of a new date during the sessions. Participants were required to sign a consent form before the session began.

Ethical consideration was necessary given that there was a slight risk of upset for the participants due to the nature of the questions relating to difficulties and feelings surrounding acceptance on a course and college adjustment. In the event where a participant may have felt upset after the interview, they were encouraged to contact the researcher or use the information on the debrief form to contact a counsellor. Similarly, in the event where a participant may feel upset during the interview, they had the right to leave without explanation and the right to request that their data be removed from the analysis. Participants had the right to withdraw from the group interview at any time. At the end of the interview or if a participant left the group early, they were given a debrief form with the researcher's supervision team and the student counselling service contact details.

Identifiable information was not required for the purpose of this study and was not recorded or held. Identities were anonymized and protected when transcribing. Confidentiality was maintained in this study by not divulging information to other personnel, except for those directly involved in the study, namely research supervisors and one inter-rater. Such personnel were unable to link the data to participants. Any identifiable information was changed in the transcripts to preserve anonymity.

### **3.3.5 Analysis**

#### **3.3.5.1 Thematic analysis.**

Thematic analysis was deemed suitable for this study to extract an overview of college adjustment issues. The aim of this study is to categorise the dataset to identify items for the student adjustment scale. There are several approaches to thematic analysis, however Braun and Clarke's (2013a) was implemented successfully in past literature and works well with varying size datasets (De Clerq et al., 2018; Delaney et al., 2011; Waller et al., 2016). The structure of Braun and Clarke's thematic analysis was preferred where two levels of themes are identified, overarching themes and sub-themes, sub-themes must be distinct and unique, as should each over-arching themes (see Table 3.4).

Table 3.4

*Summary of thematic analysis methods*

Questions	Thematic Analysis (Braun & Clarke, 2006)	Thematic Network Analysis (Attride- Stirling, 2001)	Applied Thematic Analysis (Guest et al., 2012)	Required for current study
What is it?	Analytic Method	Interpretive Tool	Methodology	Analytic Theoretically independent – the entire thesis is mixed methods
What theory does it depend on?	Theoretically independent	Phenomenology	Phenomenology	
Prior knowledge of theoretical knowledge?	Can be learned without some theoretical knowledge essential to other qualitative approaches	Yes	Yes	
Research question	Works with a wide range of research questions	Not mentioned	Need to frame the analysis to inform the research questions	Two research questions but also need to identify new areas of college adjustment
Data sources	Used to analyse different types of data e.g. media, transcripts etc.	Used to analyse textual data	Used to analyse observations, interviews, focus groups, secondary data	Transcripts only
Dataset Size	Works with large and small data sets	Not mentioned	Works with large and small data sets	Medium sized dataset (with acceptable limits)
Levels of themes and sub- themes	Two levels: Overarching themes and sub-themes	Three levels: Global themes, Organising themes, Basic themes	No limit	For questionnaire design, two levels of themes is suitable
Codebook	No	Not mentioned	Very important	Will be analysed using NVivo nodes
Validity and Reliability	Not advocated	Not mentioned	Very important – methodological rigour	Inter-rater reliability will be sought

Themes were identified using the 'bottom-up' or inductive approach, they were strongly linked to the data. The codes were identified progressively during data collection (Miles et al., 2014). The data analysis involved using the six phases of thematic analysis where the identification of latent themes goes beyond what the participants said (Braun & Clarke, 2006). All group interviews were transcribed by the researcher. Initial themes or codes were identified by reading and re-reading the transcripts. Using NVivo 11, data extracts were grouped together and checked for common patterns. The candidate themes were rechecked against the audio files and rechecked against the transcripts. During this process, particular attention was focussed on identifying new themes or codes. Once coding was complete, the data were examined for differences and similarities across all themes and codes, to identify commonalities and variations. At the end of the six phase guide (Braun & Clarke, 2006), five overarching themes were identified (see Table 3.5). The complete process and results for this study using the six phases of thematic analysis can be found in Appendix B.

Table 3.5

*Summary of the phases of Thematic Analysis*

Phase	Description of the Process from Braun and Clarke (2006)	Applied to this Study
1. Familiarising yourself with the data	Transcribing data, reading and re-reading the data, noting initial ideas	All group interviews were audio recorded and transcription was carried out by the researcher throughout the data analysis process. The transcripts were read and re-read. Initial ideas were noted on paper and later in NVIVO as memos on data extracts
2. Generating Initial Codes	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code	NVIVO was used for coding transcripts as they were completed. During the first cycle of coding, initial codes were many and diverse. The second cycle of coding involved refocussing on the research question and breaking it down so that all aspects of the problem were identified in the data.
3. Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme	Preliminary themes were identified and all data extracts were grouped according to theme. This phase involved multiple levels of sub-themes. Over-arching themes were identified
4. Reviewing themes	Checking if the themes work in relation to the coded extracts (level 1) and the entire data set (level 2), generating a thematic map of the analysis	Thematic maps were generated throughout the coding process
5. Defining and naming themes	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells; generating clear definitions and names for each theme	Clear descriptions of each theme and sub-theme were written. Uniqueness of each sub-theme was examined and themes and sub-themes were further refined.
6. Producing the report	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis	Data extracts are used to represent the themes and sub-themes. All themes are related back to the research question

<sup>a</sup> Source of process descriptions can be found in Braun and Clarke (2006, p. 35)



### **3.3.5.2 The use of NVivo in thematic analysis.**

NVivo version 11 was used during the process of identifying themes in the data. According to Bazeley and Jackson (2014), there are a number of concerns regarding using computerised tools for qualitative analysis: 1) computers can create a distance between researchers and their data; 2) the mechanical act of code-retrieve methods could harm other qualitative analytic activities e.g. overlooking other data; 3) the computer mechanises analysis and streamlines it, making it more like positivist or quantitative approaches; 4) the computer supports only grounded theory or worse, the software creates its own approach.

To counteract these potential areas of concern, the following approach was taken: 1) all of the group interviews and transcription were conducted by the researcher, therefore the use of NVivo did not distance the researcher from the data; 2) the thematic analysis step-by-step guide (Braun & Clarke, 2006) was followed to ensure that the process was transparent and recorded at every point of coding and analysis; 3) Nvivo was used to organise and categorise the data; 4) the data was read and reread throughout the process, and themes were identified on an ongoing basis. The codebook was generated from NVivo once the analysis was complete (see Appendix C).

### **3.3.5.3 Inter-rater reliability.**

Some research claims that inter-rater reliability is an intricate part of qualitative data analysis (Guest et al., 2012; Miles et al., 2014), whilst Braun and Clarke (2020) do not advocate its use, specifically for reflexive thematic analysis. Contrary to Guest et al. (2012), they argue that inter-rater reliability is not suitable to qualitative research because it assumes that coding is objective,

when reflexive qualitative research assumes that the researcher inevitably influences the design, collection and data analysis (Braun & Clarke, 2013a). In reflexive qualitative analysis, quality checks such as member checking with participants are preferred. However for the current study, percentage agreement inter-rater reliability was used (Miles et al., 2014) in addition to member checking. The inter-rater coding obtained an agreement of over 85% by comparing codes from both coders (see Appendix D), which is an acceptable percentage match (Guest et al., 2012; Miles et al., 2014). The differences and similarities were discussed between the researchers, mostly the original codebook was retained for the final analysis. In areas of disagreement, the subthemes were reconsidered and two subthemes were removed due to insufficient content.

#### **3.3.5.4 Member checking.**

Member checking refers to checking the data with the participants in the research (Braun & Clarke, 2013a). This was carried out at the end of each group interview during data collection. The researcher made notes on what was said during the interview and read a summary of the notes out at the end for agreement or further discussion to ascertain whether the notes accurately reflected the participants' intended meanings and intent during the interview. There were no objections to the notes and no obvious hesitancy on the part of the students. However, this does not rule out that the students may not have been forthcoming with corrections, perhaps due to lack of familiarity with the researcher or lack of confidence.

### **3.3.5.5 Audit trail.**

To increase transparency of the research, an audit trail is used to allow the reader to access how the analysis was carried out in addition to the results of the analysis (Guest et al., 2012). Braun and Clarke (2006) propose a six phase guide to thematic analysis which was followed in this study (see Appendix B).

### **3.3.5.6 Transcription and translation.**

Each group interview was audio recorded and transcribed verbatim by the researcher according to a transcription protocol. A template for transcription was used that was created by the researcher. Each participant was given a pseudonym that was used in transcription, analysis and at the write-up stage. All speech was transcribed along with pauses in speech, idiosyncrasies and laughter. Where participants spoke over each other, this too was noted in the transcripts. Translation was not required for the transcripts, all interviews were conducted in English.

### **3.3.5.7 The role of the researcher.**

As part of the qualitative paradigm, researchers are unable to exclude themselves from both the method and interpretation stages of the analysis (Braun & Clarke, 2013a; Lincoln & Guba, 2000). Therefore, it is necessary to explore my own role as researcher and to consider the influence or impact that my role had on both the method and the interpretation of the research process (see Appendix E).

## **3.4 Results**

Five overarching themes were identified and analysed using the Braun and Clarke (2006) six phase guide: 'social exclusion', 'social cohesion',

'interpersonal skills', 'peer group influences', 'social media and instant messaging etiquette' (see Appendix B). The results of the analysis will be discussed in light of the two research questions: 'What is the effect of blended (online and face to face) interactions on college adjustment?' and 'What new experiences must students adjust to across years, courses and colleges?'. See Appendix F for sample excerpts.

### **3.4.1 Theme 1: Social exclusion**

This theme includes all aspects of social exclusion, including online and offline occurrences where social exclusion can affect social adjustment to college. The overarching theme relates to the research question 'What is the effect of blended (online and face to face) interactions on college adjustment?'. The overarching theme social inclusion contains the following sub-themes: fear of missing out, online visibility of old friends drifting and online and offline impact.

#### **3.4.1.1 Fear of missing out.**

This sub-theme includes areas of dissatisfaction caused by comparison of lived college experiences to those perceived experiences of their friends. In which cases, some participants felt that their friends were having a better experience and other participants expressed that their friends were jealous because of friendships they had forged. Participants had visibility of their friends' experiences through social media which may have affected college adjustment. An example hereof is offered by Sophie, a second year student, who applied to college straight from school. She found college to be a huge challenge but her friends outside of college convinced her to stay and get her

degree. She found herself comparing her college experience with friends who went to other colleges.

she [Sophie's friend] lives near everyone she goes to college with, they walk to college together and then they do like activities after college together so they can just walk home and whenever they go out it's like everyone going at the same time to the same places like and we're just like "oh I don't do anything".

For those who fear missing out, the data shows that they remain in contact with their old friends, through both social media and instant messaging. Even though they may feel excluded, they wanted to see what their friends were doing and what plans they were making, plans usually from which the participants were excluded. Reasons for exclusion ranged from friend groups attending different colleges to friends working instead of attending college. Some participants in the group interviews expressed their regret at accepting their current course by comparing their experience to experiences in other colleges and universities.

The participants who expressed feelings of jealousy or envy were those who selected a different college or career route to their friends. An example hereof comes from Roy, a second year student, who felt that he was missing out because he did not choose a college with student accommodation and was not living in close proximity to his classmates.

there's about four, five or six houses of all students and all the doors are open and you'd just be sitting there and everyone is like what are we doing like? And everyone will be jumping from party to party.

It could be suggested that participants had not anticipated the impact of their friends perceived college experience on their own college adjustment.

### **3.4.1.2 Online visibility of friends drifting away.**

This sub-theme relates to missing friends, where students miss their old life and daily contact with their old friends. The concept of friendsickness (Paul & Brier, 2001) is one that is associated with inadequate college adjustment, where the student may find it difficult to adjust to a new social life or to see their old friends adjust to a new social life.

During the group interviews, participants often referred to social media and instant messaging as a handy tool to keep in touch but they also discussed how social media allows them to see their old friends drifting away and living a life that doesn't include them, which can increase feelings of loneliness and isolation as expressed by Bridget, a fourth year student. She reflected on her thoughts and experiences throughout her academic journey, when she was the only one from her group of school friends who went to a different college and initially found it difficult to accept that her friends had a college-related social life without her. She experienced loneliness and possibly loss and grief and had to allow herself time to come to terms that her friendships were changing. Perhaps including Bridget in Snapchat conversations were attempts to keep her included in the group, albeit virtually, but the physical loss of being present was causing Bridget to feel lonely. In this case, instant messaging was not a substitute for her old friendships, it suggested that her friends were moving on without her.

I'm the only one who's not in [college name], so like you even see Snapchats of them meeting up and you'd be like "oh they went for lunch without me" but they're in the same college together and that's why, you're not going to trek all the way back.

Participants recognised that old friendships began to change once college started and social media simply reinforced this observation. An example is Kevin, a first year student who found that Facebook was a method of observing changing friendships, he already felt that old friends were socialising in a different way and that the use of Facebook simply confirmed this.

you might see people more drifting towards their college friends or college life in general and leaving everyone else behind and like I suppose Facebook is a good way of being able to <pause> not monitor it but it is in, like, you can see it anyway.

#### **3.4.1.3 Online and offline impact.**

As the data suggests, social media is considered a normal way of communication amongst undergraduate students. The boundaries that separate online and face to face interactions are becoming blurred with respect to how face to face incidences are propagated through social media and instant messaging and how online incidences can negatively impact on face to face relationships. This sub-theme includes how online and offline behaviour is becoming integrated and how online actions can have an offline impact. An example is Jane, a second year student who recalled an online incident within the class WhatsApp group, the incident was not resolved and resulted in the breakup of friendships.

there was kind of like an online incident that split our whole friend group, like we had quite a large friend group and an online incident split it up so that made it quite awkward in college as well but obviously get over it whatever and move on but it originated from an online incident and it carried into college.

Other participants reported that offline incidences moved to online discussions which resulted in negative feelings towards a group of people. In this case, Millie, a third year student found that the college experience was not what she was expecting. She recalled a face to face incident that resulted in her neighbours posting negative comments about the incident online. This left her with negative feelings towards their neighbours in an offline environment.

I know it sounds bad but you'd kind of be like, ok that person that you speak to, are they the ones doing that online? Like that was a problem, because it was anonymous, you would have absolutely no idea who it was, and it went on for months.

### **3.4.2 Theme 2: Social cohesion**

This theme explores social connection to a course, college and friends as a result of using social media. Considering the research question, 'what is the effect of blended (online and face to face) interaction on college adjustment?', the positive aspects in relation to online activity need to be identified as these are possible enablers to adjustment and could potentially result in a student staying in a course or at the college itself. The overarching theme social cohesion contains the following sub-themes: online peer support, friendship maintenance, online social bridging and student sense of belonging.

#### **3.4.2.1 Online peer support.**

This sub-theme is concerned with how social media and instant messaging was used for group work or assignments. Some participants reported that they felt supported by the group and others found that using online was a hindrance to getting things done in a timely manner.



Participants spoke about the convenience of social media, in particular, the use of Facebook as a point of contact when it came to requesting help with academic work. In order for help to be forthcoming, a foundation of trust was established amongst the classmates. Participants discussed that they would always receive help from peers over social media or instant messaging, this may have increased their sense of social and academic support. An example is Stuart, a second year student reflecting on his academic challenges in first year.

at some point I would be chatting to someone from the class on Facebook just saying like “what did you do for this”, pretty much every assignment, I think I’ve done that.

The use of Facebook or online communication when doing a college assignment was generally viewed as a positive attribute of social media. It allowed students to stay connected and allowed them to complete their group work even if they lived a distance from each other.

Some students spoke of how online behaviour can be negative in relation to college adjustment. In particular, the focus was on instant messaging and group chats which the student groups set up independently of the college or university. In some cases, the group chats facilitated negativity from students in relation to coursework and overall satisfaction with the course. Catherine, a second year student, was part of a group that felt negative about the college, she also found that the class WhatsApp group was used as a hub to complain. She observed that while group members may post something negative on the class online group, they seemed to be having fun in college according to their other social media posts.

you just see people complaining about like having so much assignments and exams coming up but then you'll see like on Snapchat, they'll be having a laugh or whatever in college.

In one particular group interview, the group set a negative overall tone for the remainder of the group discussion. Whilst the participants in the group did not deviate from each other, this group interview was deviant insofar as other groups were not as negative in general about the college and course. Similar to Catherine, Ursula found that her interaction with other groups in the college, such as the clubs and societies that she belonged to, were positive experiences in comparison to her interaction with her classmates.

I'd see both because I'm really involved in a lot of societies and it kind of like in the groups so it's always like come to debate soc or come to yoga soc and its always really positive and were having pizza this week and this is the debate. And then you'd see other things like our group would be like oh "where's this eh brief" and "oh my God, how many words do we have to do for this essay?".

#### **3.4.2.2 Friendship maintenance.**

Some participants reported that they could not be without social media to maintain contact with old friends while others found it superficial and not a substitute for seeing or talking to their friends. An example is Tom, a second year student. He felt that in using the same social media platform as his friends, he was with his friends when physically in a different location. In this case, the frequency of use, did not weaken his friendships.

you can even get to stage where you could be sitting in [other college] and you could feel like you're sitting with all your mates.

Superficiality was discussed amongst participants during the group interviews, when communication with old friends becomes nothing more than general announcements, as expressed by Isabella, a first year student. She found that friendships need time invested into them and that contact through social media is not enough.

but like you can only do so much talking through text, it's important to make time for those people wherever you have it cos they'll make it for you as well.

According to the findings, some friendships that moved online, seemed to lack meaning for some participants. Participants recognised that it was equally important to make an effort with old friends and not to depend on social media communications. Social media was not considered a substitute for seeing friends face to face especially if friends did not stay in direct contact.

#### **3.4.2.3 Online social bridging.**

Participants spoke about the class group chats that were set up by class representatives or members of the class in an effort to connect everyone. Sometimes these group chats were setup prior to the first day of college. Most participants reported that they were nervous about starting college and nervous about meeting new people. Others mentioned that they found it hard to make friends. For those who participated in a class group chat before the course started, they found that it helped them get to know classmates and names. The online groups seemed to provide a cohesion between the group members. An example is Yasmin, a second year student. On reflection, she felt that knowing something about classmates prior to speaking to them, made it easier to strike up conversation especially with regard to common interests.

it's not that like social media is always an accurate representation of people but I feel like you get more of an idea of what they're about you know, [...]. So you see how this person presents themselves other than "oh hi, what's your name" in class. I feel like you kind of get to know people a little bit quicker.

Yasmin's insight into the usefulness of Facebook regarding getting to know classmates was echoed by other participants. She seemed to find huge benefit of having the online class group from the start of the course. Generally, participants found that Facebook was used as an ice-breaker so that it made it easier to talk to people in the class and find out some information on them. They found that Facebook eliminated the awkwardness of meeting new people. Shyness or lack of confidence was compensated for when social media or instant messaging was used. Social bridging, the act of initiating a relationship was facilitated by Facebook and carried out online prior to actually meeting classmates.

Whilst Facebook provided familiarity with classmates before college started, the opposite effect was also true for those who had not been part of the initial group or did not know of the online group. Those who either did not have Facebook accounts or who had not found out themselves, felt somewhat more insecure than if there had been no Facebook group. Elizabeth, a first year student, attended college straight from school and was concerned about meeting friends on the course. She was not aware of a Facebook group that had been set up prior to the course starting and felt excluded on the first day when she thought that everyone already knew each other. Whilst the group

discussed a Facebook group, Elizabeth mistakenly believed it to be a Google Chat.

emm yeah the first day I was so shy I did not know anyone and I didn't know there was a Google Chat, so I went in and they were all talking like they were best friends, so I went in and literally sat by myself.

Elizabeth felt excluded on the first day of college but she seemed to quickly recover when she realised that she knew someone on the course and they became friends. For Elizabeth, while her initial experience was not pleasant, her everyday experiences were enjoyable given that she made friends in college by sitting beside them in the canteen on the first day.

#### **3.4.2.4 Student sense of belonging.**

Participants expressed that lecturers seemed to limit interaction outside of the classroom and some students struggled with this. The student groups seemed to make up for any perceived lack of engagement from faculty. For example, they would ask each other about an assignment rather than go to the lecturer. Whilst the classroom environment did not provide a sense of belonging, the student online groups seemed to address this. Norman, a first year student, found that communicating with classmates online was very helpful but that communicating with lecturers outside of the classroom was very difficult and almost forbidden by some. This approach by faculty staff could impact on the sense of belonging experienced by students.

one says "don't email me, don't email me and don't catch me in the corridor", I was like "when can I talk to you? When can I contact you?".

Students seemed to find that the sense of belonging was forged in friend groups, not limited to face to face. They did not necessarily hold any emotional

connection to the college itself but more to the clubs, societies and friends that they made along the way. The perceived lack of faculty engagement with students was an issue that was discussed among some of the student groups. The participants generally discussed that email was not an effective form of communication but that the college still continued to use it as its primary form of online communication. An example was Fred, a first year student, who felt that the college did not communicate in a student-friendly manner, they didn't use mobile technology with which students were familiar.

I wouldn't initially have any of the email, any of the lecturers' emails and lot of the time people don't, I feel like email, is more of a difficult way of communicating.

### **3.4.3 Theme 3: Peer group influences**

The influence of peer groups was strong throughout the interviews. This over-arching theme is related to both research questions 'what is the effect of online and face to face communications on college adjustment?' and 'what new experiences must students adjust to across years, courses and colleges?'. The overarching theme of peer group influences contains the following sub-themes: friendships as positive connotations of college, motivation and competition and the influence of college and class size.

#### **3.4.3.1 Friendships as positive connotations of college.**

Throughout the dataset, participants noted how important friendships are in college and that these friendships can be forged for life and can give a very positive outlook on the overall college experience. Blake, a second year student mentioned that he had come from another larger college where he did not make friends, and found it difficult to adjust to the college environment. On moving to

a new course, he found that the social aspect was completely different and encouraged him to attend and to stay in college on a daily basis. In Blake's case, the friendships that were forged left him with a positive view of the college experience whereas he had a negative view of the first college that he attended.

I was in a course before and I didn't know anyone and I wasn't too involved and basically lived far away from it. It made it really tough to adjust to it.

Repeatedly, participants expressed that having friends in college makes them want to attend. Participants discussed friendships in a positive light. They reported a sense of positivity and enthusiasm for college due to their friends. They found that daily routines were influenced by them and that they looked forward to seeing their friends. Lee found that making friends made the day seem more enjoyable and motivated him to go to college

it's easier to get up in the mornings, when you know you're going to see your mates.

#### **3.4.3.2 Motivation and competition.**

This sub-theme addresses how online communication influences decisions about engaging in college or college work by increasing or decreasing motivation and competition amongst peers. Students discussed the influence of their friends' attitudes which could affect attendance and overall adjustment to college. Participants reported that they generally copy their friends in relation to lecture attendance. They found that they just simply would not attend if their friends were not going in. Megan, a first year student, found that her friends' attendance in college influenced her behaviour.

If everyone was like, "yeah we're going in", I'd be more likely to go in.

Some participants reported that they compete directly with their friends, both old and new. Participants reported visibility of what their friends were doing and they were either striving to achieve the same or were ahead of their group of friends. Social media usage seem to encourage competition and motivate students in their work and achievements. Bob was particularly interested in his course and was motivated to do well. He found his classmates to be motivating and seemed to enjoy competing with them.

We're all aiming for the same kind of course, the same places like. We're all such good friends but we know that we're in competition with each other as well, academically speaking.

#### **3.4.3.3 Influence of college and class size.**

Participants identified that the college and class size can affect how they settle into college with regard to getting to know people, and the work. They seemed to constantly compare themselves with other institutions, sometimes from the perspective of how lucky they are and sometimes considering that students in other colleges are in a much better position. An example is Andrea, a first year student. She started her course straight from school, most of her school friends went to another university and she felt she was missing out on a lot of things by not being with them. On occasion she went to her friends college and stayed there rather than returning to her own campus. Her dissatisfaction with college life was centred on the fact that she missed her friends and by being in a small college, she possibly felt that she did not have much of an opportunity to make other friends. This could have influenced Andrea's feelings about her course.



There's only 20 people and on a good day, 7 come in, so sometimes you're a bit like, "ah here, who am I going to talk to in this class?"

Megan, a first year student started university straight from school. She found that her friends from school chose a different path to her, either working, travelling or different universities. The university and course were not her first choice. She lived locally to the university, and felt that this was more of a hindrance with regard to experiencing the social aspect of university. When she started, she did not know anyone and felt that the people she got to know were the ones she sat beside in lectures, she did not connect with her classmates online before the course started. She felt that the large lecture theatres and volume of people attending those lectures prevented her from making friends for the first month of university.

I think that everyone is scared to talk to each other. You get sat in a big lecture hall and then whoever you sit next to is who you say hello to and I think that's about it.

#### **3.4.4 Theme 4: Social media and instant messaging etiquette**

This theme covers all aspects of online etiquette that was discussed in the group interviews. The use of platforms such as Facebook and WhatsApp are used under differing circumstances, depending on the closeness of the friendship and the urgency of the communication. Students generally identified that there are unspoken ways of conducting themselves online. They outlined and discussed the limitations, risks and acceptable behaviour of social media and instant messaging. This theme relates to the research question on new experiences that students adjust to across years, courses and colleges. The

scope of the theme includes all aspects of online etiquette: online messaging etiquette, the distinction between online and offline friends and online usage.

One of the differences between students based in Ireland and students based in the UK, was that the Irish students used Facebook to set up class groups so that all class members would be part of the same online group. In both colleges, smaller WhatsApp groups were generally created when friendships began to form.

#### **3.4.4.1 Online messaging etiquette.**

This sub-theme contains data extracts on the use of various online platforms such as personal or formal postings. The process of communicating with peers was made very clear by a number of groups. Evidence in this study suggests that public communications are not used or if they are, it is targeted at a particular friend group on social media. The participants discussed the use of Facebook as an initial introduction to the class group, once established, participants seemed to branch off and create smaller groups on WhatsApp usually when groups of friends were formed or when there was a group assignment.

Participants distinguished between the uses of different social media platforms, for example those suitable for personal use and those for formal use. Texts on platforms such as WhatsApp were used frequently as well as voice notes. Telephone conversations with friends were considered as taking too long and that the participants simply did not have the time to call someone. They preferred quick and instant communication.

Denise, a first year student, started her course straight after school and moved away from home to attend the course. She found that the online

Facebook fresher's group made the experience of starting the course less stressful and used a wide variety of platforms, including gaming platforms, to keep in touch with people and to make new friends.

Snapchat is more casual, like you can message someone on Facebook and have a conversation but you can just kind of send one Snapchat that shows how your day is going or something, and it's kind of easier.

In Denise's case, she opted for the more superficial approach to maintaining some friendships on a day to day basis. Social media has redefined the term 'friend' from something that had meaning to an ambiguous undefined term where a 'friend' is any online social connection. According to the participants, the perception of 'friendship' seems to have changed in recent years.

Other participants spoke about feeling uncomfortable with some content on social media. They noticed the differences between socially acceptable and unacceptable online behaviour. They generally did not react online to these situations and instead considered unfriending people if they found their actions to breach the unspoken etiquette. Edna, a first year student previously completed another course to get into college. Edna spoke of the discomfort she felt when people she knew referred to her social media posts either face to face or on another social media site. She felt that the action of cross-commenting across social media platforms breached unspoken social media etiquette.

it's a bit weird if you only ever talk to them online or you guys just like the same things and you're not that close and they start telling you posts that you've made on other forms of social media say Instagram for example.

#### **3.4.4.2 Distinction between online and offline friends.**

The participants were asked if they see a difference between friends online who they have never met and other friends. The participants identified that the definition of 'friends' has changed over generations and participants expressed that on occasion it is easier to speak to someone online that they did not know.

Some participants spoke of online friends whom they had never met but that these friends played a role in their online lives, where there was no face to face contact so they felt that they could confide in them about their personal lives with minimum risk of their friends finding out. An example is Sarah, a second year student who found college adjustment particularly difficult in relation to making new friends and increasing her social circle, she found that she would speak to online friends when she needed to speak to someone who didn't know her friends.

I wouldn't call them friends, but I feel like you can talk to each other like one of them he tells me when he's having a hard time and we like rant to each other or tell each other stories when we're bored.

Participants found that they would not consider online only friends as being friends, they needed a combination of online and face to face communication to maintain a friendship. They categorised types of friends and seemed to recognise that there was a difference in the quality of the friendship. The hesitation in admitting that they had online only friends could have been exacerbated by the fact that their opinions were outliers in the group interview. It is possible that other students felt the same way during the interview but did not

speak up because of the majority opinion that online only friendships were not the norm.

Emma, a fourth year student reflected on her experience of friendships both online and offline, she recognised that the definition of friendship has changed throughout the years but that close friends are still important and distinct from other types of friendships.

I think probably we have a different definition of friends in this generation because we have so many friends and then we have our good friends, you know where you stand on the spectrum.

#### **3.4.4.3 Online usage.**

The participants spoke of how often they use social media or instant messaging and what they use it for. Most participants reported that they privately text or message their family or friends, which could suggest that public communication is limited to target friend groups on social media.

Generally participants discussed the fact that they messaged people who were close to them to tell them of the course acceptance. This was irrespective of whether or not they were happy with the course offer. Some felt that they sent a message to their friends because they were happy, others sent photos of the acceptance letter. Participants who described themselves as private, tended to send private messages to friends and family. Private online messaging or texting was conducted with close friends and family. Ursula, for example, found that announcing it on Facebook meant that it was happening and that she had made her decision. She felt quite negative about announcing her course acceptance because of the anxiety she was experiencing due to being accepted on the course.

just texted everyone and then a few days later put it up on Facebook “oh might as well do it, just let everyone know it’s happening”.

To some, a public announcement was linked with being happy but in Olivia’s case, she felt that public announcements were insensitive to how friends might be feeling about not getting the course they wanted. Olivia’s concern for her friends’ well-being influenced her to not engage with the trend of posting college acceptances on social media.

I had a lot of friends that didn’t get the points and didn’t get into their courses or anything like that, so I got texts off them saying “oh it’s so upsetting seeing people put up their stuff on Facebook”.

#### **3.4.5 Theme 5: Academic and Interpersonal skills**

This theme is concerned with how students develop their interpersonal skills in order to adjust to a new college environment. This theme relates to both research questions, ‘what is the effect of online and face to face communications on college adjustment?’ and ‘what new experiences must students adjust to across years, courses and colleges?’. On starting college, students have to learn many new skills such as independent learning and managing perceived freedom at college in relation to reduced hours in the classroom, managing perceived optionality in attending lectures and submitting work. Prior to starting college, students with different demographics such as age, gender, life experience and academic qualifications may have already developed independent learning skills and learned how to manage a new learning environment. This theme contains all of the data extracts relating to developing academic and interpersonal skills: independent learning, managing

differences between school and college, lack of self-confidence and social anxiety.

#### **3.4.5.1 Independent learning.**

Participants reported that independent learning, the perceived freedom of college and motivation to learn were all factors that contribute towards college adjustment. Yasmin reflected on how she adjusted in first year, she found that it took her a while to adjust to taking control of her own study. She felt that the work was almost optional for the first few months of college because there was no teacher constantly checking her work. Yasmin's perception of the value of the prescribed work was that it was possibly not that important because no one was looking for it.

the work seems more optional than it did in school cos they're just going to tell you to read something for homework and then they're not going to ask you questions about it the next day.

Craig, a first year student observed expectations of independent learning in college with perceived freedom where students can opt to miss lectures. Craig found it difficult to switch mindset from when everything was mandatory in school to the perceived freedom of college where students were responsible for their own learning.

people get the mindset that there is more freedom and independence in college.

Evidence suggests that Craig's perception of independence was linked to the value that students place on attending lectures and completing coursework.

### **3.4.5.2 Managing differences between school and college.**

This sub-theme contains all of the data extracts relating to observed differences between school and college, with the exception of independent learning. The data extracts cover issues from living arrangements, travel, work and striking an overall balance between all of the new activities.

Quinn, a second year student found that a lot changed when she finished school and started college. Over the course of the two years in college, she felt that she had to become more independent so that she was not depending on her parents for everything. While college brought with it perceived freedom, Quinn's contribution to the discussion demonstrated that college life can be a challenge to balance all of the new experiences.

when I was in school, I didn't work or anything though, none of that. I mean my mum drove me to all my hockey matches and everything like now you have to fend for yourself.

Patricia was a third year student at the time of the group interviews. She felt that the adjustment at the start of college was very difficult, in addition to a new environment and college work, all of the other changes seemed to be unexpected and college life became more of a self-managed balancing act.

you're trying to balance college, friends, as was said work, like some people work as well, getting here on time, assignments, everything, it's just hard at the start.

### **3.4.5.3 Lack of self-confidence.**

Initially some students questioned their ability and aptitude for the course. This did not seem to deter them from starting although this research only interviewed students who had accepted the course and were currently



attending the course. Generally participants found that most students felt the same when they started college and that it was over time that they adapted to the environment and to the expectations surrounding college assignments.

Gabriella, a first year student, transferred from another course into her current course, she feared bad grades and not being able to perform academically.

I think it's just the fear of not, yeah not getting it right, not passing, not getting a good grade in the assignment, the fear of not doing the work, basically properly.

Michaela was a mature student in first year, she found that her confidence in her ability grew once she began to successfully complete college assignments.

like now we've got one presentation under our belt and we did well on it, when we get to the next one, those nerves aren't going to be the same because we're getting used to it.

#### **3.4.5.4 Social anxiety.**

Students spoke of feelings of loneliness and isolation and how difficult it was to get to know new people. They also spoke of how they managed this prior to starting college. Lee, a first year student spoke of how social anxiety influenced his feelings towards attending college in the first couple of days when he knew that he had to give the new environment a chance.

I was a bit terrified but then I had to just kind of step back and say ok, it's only the first day, you have another day or two to get your bearings before the real college starts.

Anna, a first year student attended college straight from school and found the transition difficult from a social aspect. Most of her friends had gone to different universities or had pursued other directions, she found that she did not see her old friends as often and missed them. It would seem that no one in college took over the role of 'best friends' as that role already belonged to her old friends.

all my friends moved away to uni or they like work full time so like I never really get to see any of my friends.

#### **3.4.6 Summary of findings**

Five overarching themes were identified in the dataset, along with 17 sub-themes: Social cohesion, social exclusion, peer group influences, academic and interpersonal skills and social media and instant messaging etiquette. A mix of the overarching themes addressed the two research questions. The research question on the effect of blended (face to face and online) interaction on college adjustment is addressed by a mix of four overarching themes: social cohesion, social exclusion, peer group influences and academic and interpersonal skills. The second research question to identify new college adjustment experiences across years, courses and colleges, is a mix of three overarching themes: peer group influences, social media and instant messaging etiquette and academic and interpersonal skills.

### **3.5 Discussion**

This study offers a unique insight into how social media is used by undergraduate students. The results highlight current college adjustment issues and how students try to overcome these issues using social media.

For the current study, in order to obtain an insight into undergraduate students' college experience, it was considered necessary to speak directly to students before constructing a new scale. Furthermore, in later chapters of this thesis, these insights will be used to identify items for the student adjustment scale. The findings from this analysis supports the claim that the use of social media is commonplace for students, not only to maintain contact with old friends but also to establish a new social network in the college environment (Burke et al., 2010; Ellison et al., 2007; Ellison et al., 2014). Furthermore, reported motivations in using social media and instant messaging are driven by needs to maintain contact with old friends, make new connections, the fear of missing out, maintain and establish support, establish a sense of belonging and navigate independent learning.

In contrast to previous research, findings from this study suggest that social media use by undergraduate students facilitates engagement, academic performance and adjustment to college with some exceptions regarding the negative influence of friends on attendance at college (DeAndrea et al., 2012; Junco, 2011; Kalpidou et al., 2011; LaRose et al., 2011; Yeboah & Ewur, 2014).

The four subscales of the SACQ (Baker & Siryk, 1989), are somewhat addressed in these findings: social, academic, personal-emotional and institute attachment. 'Social cohesion', 'social exclusion' and 'peer group influences' relate directly to social adjustment, 'academic and interpersonal skills' relates to academic adjustment and 'social media and instant messaging etiquette' directly relates to social media usage, the latter theme is not considered in the SACQ or any of the other college adjustment scales (Baker & Siryk, 1989). Furthermore some of the content of the themes for 'social cohesion', 'social

exclusion' and 'peer group influences' are concerned with social media usage and these aspects are not included in existing college adjustment scales. The findings of this analysis suggest that social media is intricately used by students during college adjustment.

In order to ascertain the use of social media in college adjustment, the overarching themes were linked to the two research questions. The themes are not exclusive to individual research questions.

### ***3.5.1 RQ 1: What is the effect of blended (face to face and online) interactions on college adjustment?***

The effect of blended (face to face and online) interaction on college adjustment is a mix of four overarching themes: 'social cohesion', 'social exclusion', 'peer group influences' and 'academic and interpersonal skills'. These themes relate to the SACQ subscale of social and personal-emotional adjustment (Baker & Siryk, 1989). Based on the findings from this analysis, the effects of blended interactions fall into two categories: 1) managing separation from old friends and bridging friendships; 2) a sense of belonging in a new environment. Both will be addressed in the following sections.

#### **3.5.1.1 Managing separation from old friends and bridging friendships.**

Social media, especially Facebook, was used in an effort to bridge social capital (Putnam, 2000) but also to seek information on potential friends. It seemed to be common practice to find out about classmates before conversing with them face to face. The differences between the UK university and the Irish institute was that one did not encourage the use of Facebook for a class group and the other did. The students who were part of an online class group from an

early stage in the course, seemed to find it easier to speak to classmates and subsequently socially adjust to college.

While research shows that social media use was negatively correlated to psychological well-being (Kalpidou et al., 2011), regardless of positive or negative experiences, students tended to continue to use social media to bridge and maintain friendships, they perceived that the benefits of using social media outweighed the negatives. Previous research found that social media use was negatively correlated to academic performance (LaRose et al., 2011; Yeboah & Ewur, 2014), but in contrast, the findings from the current study suggest that social media, particularly group chats on WhatsApp or Facebook Messenger, may be used effectively for academic work. Although students commented that it takes longer to complete work when working in online groups in comparison to face to face.

While social media allows for groups of friends to communicate, it can also facilitate the purposeful or accidental exclusion of others or themselves. Based on the need to belong, students often joined exclusive online groups and possibly unknowingly excluded themselves from making other friends and prevented the growth of a support network (Baumeister & Leary, 1995). This exclusion from a potential support network could lend itself to unsatisfactory college adjustment (Baker & Siryk, 1989; Friedlander et al., 2007). Even though most students discussed that content on social media emphasized that their old friends had moved on, they still persisted in staying in online groups whilst feeling physically and emotionally excluded from their friends' lives. Many participants expressed that they missed their old friends when they started college, it could be suggested that some participants experienced

friendsickness where a student may find it difficult to socially adjust or see their old friend adjust to a new social life (Paul & Brier, 2001). Before the use of social media, a student's transition to college usually meant that their social life changed (Hutchinson et al., 2007; Paul & Brier, 2001). Participants acknowledged that old friendships can be maintained online and old friends are still a part of their social and support networks once they continue to stay in touch. The findings suggest that students place huge importance on establishing a friendship network in college, whilst maintaining their old friendships. Therefore, students do not simply move from one group to another, under social mobility, instead they maintain their old groups whilst moving into a new group (Ellison et al., 2007; Ellison et al., 2014; Gray et al., 2013; Manago, 2015; Serpe, 1987; Stryker & Burke, 2000; Tajfel & Turner, 1979). Participants expressed the importance of combining face to face contact and social media to develop friendships, they found that some old friendships can become superficial when face to face contact is not maintained (McEwan, 2013). For some participants, they found it initially difficult to adjust to college as they compared their experiences with their friends' experiences (Paul & Brier, 2001).

During the group interviews students expressed the concept of the fear of missing out (FoMO). Content posted on social media by friends tended to reinforce feelings of missing friends, participants recognised that friendships were changing and FoMO was induced where some students realised that they wished they had chosen the same path as their friends (Roese & Summerville, 2005; Pempek et al., 2009). Social media seemed to facilitate friends keeping in touch but was not a substitute for seeing friends (Amichai-Hamburger & Vinitzky, 2010; Paul & Brier, 2001).

Friendships seemed to gain strength only when online and face to face contact was combined (McEwan, 2013; Ledbetter, 2017). Distinctions in friendships were widely acknowledged by participants where online only friendships were considered acquaintances and superficiality resulted in the lack of growth of a friendship (McEwan, 2013). Participants recognised that the term 'friend' evolved over time and acknowledged that using social media played a part in its redefinition (Ledbetter, 2017). Students distinguished groups of friends such as close friends, acquaintances, and online only friends.

#### **3.5.1.2 Sense of belonging in a new environment.**

Literature in the area of college adjustment considers a factor called institutional attachment (Baker & Siryk, 1986) where students feel a sense of community with the institution or course itself. The results of this study suggest that students did not necessarily feel an identification with the college but more with the groups of friends they had made along the way, whether that was in the classroom, or in clubs and societies, they felt that they were a valued member in their group of friends. It was suggested in the group interviews that social media facilitated an improved sense of belonging which could suggest an improved sense of motivation, self-perception, and college adjustment (Baumeister & Leary, 1995; Freeman et al., 2007; Pittman & Richmond, 2007; Walton et al., 2012; Zumbrunn, 2012).

In addressing the need to belong (Baumeister & Leary, 1995), the participants spoke of establishing multiple social media accounts and therefore multiple social identities (Bano et al., 2015; Ellis et al., 2020; Kramer, 2006; Utz et al., 2015; Yang & Lee, 2018) where managing online friendships takes time and effort (Garbutt, 2009; McEwan, 2013; McKenna & Green, 2002).

Maintaining friendships on social media can become an everyday practice, some students reported that they check their phones regularly for messages, possibly because a sense of belonging is attributed to everyday efforts at maintaining friendships (Garbutt, 2009) and through gratifying the need to make friends, social media and instant messaging created a further need for maintaining instant social and academic support (Katz et al., 1979; Rubin, 2002).

According to Zumbrunn et al. (2012), instructor academic support may contribute towards student belonging. Participants discussed the communication platform used by faculty to students as 'archaic' in relation to the use of email. They also discussed that lecturers were difficult to contact outside of the classroom. There was a common perception amongst student groups that the colleges were not using the same platforms for communication as the student body. This may have reduced the sense of belonging in the college environment which relates to the perceptions of supporting student motivation, engagement and achievement in a classroom (Hausmann et al., 2007; Zumbrunn et al., 2012).

### ***3.5.2 RQ 2: What new experiences must students adjust to across years, courses and colleges?***

New college adjustment experiences is a mix of three overarching themes: peer group influences, social media and instant messaging etiquette and academic and interpersonal skills. These overarching themes relate to the SACQ subscales of social and personal-emotional subscales (Baker & Siryk, 1986). The new experiences fall into three categories: navigating new



challenges, new academic demands and new online social demands, each of which will be addressed in the following sections.

### **3.5.2.1 Navigating new challenges.**

Managing academic work and developing interpersonal skills are an aspect of college adjustment (Baker & Siryk, 1986) and the findings of the current study emphasized that some students have difficulty with this transition. Students tended to use social media to understand the new demands of starting college (Van der Meer et al., 2010). They used social media to satisfy the needs for social, emotional and academic support over a short and long term basis (Chen, 2011; Grellhesl & Punyanunt-Carter, 2012; Katz et al., 1974; Rubin, 2002). At times, social media was used in a state-dependent way, for example to alleviate anxiety in relation to assignments. In some cases, online groups provided information and motivation to complete coursework and others provided emotional and social support. Students generally supported each other in the transition into independent learning especially when they felt that the faculty did not support them. Based on the results, students' lifestyles changed once they started college, insofar as fending for themselves by balancing work, family, friends, finances and study. Some students expressed anxiety in attempting to manage these changes and others found that they had to build their confidence levels in order to cope.

Navigating new challenges when starting college is one of the main aspects of the college adjustment literature (Baker & Siryk, 1986; Credé & Niehorster, 2012). Participants expressed that college is where life and responsibilities change. Suddenly students are expected to work, to find accommodation, to learn independently, to manage their finances, to manage

their time and to navigate the college environment. The development of academic and interpersonal skills is pertinent in successfully navigating these challenges.

### **3.5.2.2 New academic demands - Independent learning.**

One of the new challenges that students face is the need to change how they have learned up to this point in their education. The expectation of college is that they manage their own learning. For some participants, when they started college, they felt that academic work was optional because lecturers were not actively looking for work and there was a lack of emphasis on deadlines (Van der Meer et al., 2010). Participants also found that they worked on what was required for the next assignment or exam which supports Žydzūnaitė et al. (2014) assertions that assignment and exam content influenced study behaviour.

Participants found that using social media for groups was helpful in their academic endeavours to satisfy a state-dependent need where they may be feeling anxious about an upcoming deadline for an assignment or an exam (Baishya & Maheshwari, 2020; Katz et al., 1974). It facilitated a sense of belonging (Baumeister & Leary, 1995) for some participants where they found that online communications with peers encouraged engagement with academic challenges (Wilson et al., 2015), encouraged motivation and competition (Zumbrunn et al., 2012) and at times persistence in the course (Lewis et al., 2017). Participants were more likely to speak to classmates about assignments than speak to lecturers, because they perceived a general lack of help from lecturers in transitioning to independent study (Van der Meer et al., 2010). They found that they would more than likely contact the wider class group for help

with assignments, where weak ties within the class group provided support (Granovetter, 1973; Putnam, 2000).

Participants also spoke of carrying out group assignments over social media and whilst they reported that they perceived the process to be slower than face to face, they also acknowledged the convenience of being able to work in groups from their own home.

### **3.5.2.3 New online social demands.**

Students noted that they had very little spare time and attempted to maximise the use of their time by limiting phone calls and using asynchronous communications over social media, such as voice notes, perhaps in an attempt to deal with more than four simultaneous social interactions at the same time (Dunbar, 2018). This pattern of usage seemed to have a counter effect and ironically take up more of their time, where they felt that they were constantly checking for messages. In these cases, the use of social media and instant messaging may not have gratified their social and academic needs.

Different online groups served different purposes for participants, while they observed that while classmates may complain within their class online group, they could post positive images and text on other social media platforms that reach a different group. In belonging to an online group, students may become identified by others as a member of that group (Tajfel & Turner, 1979). The results suggest that participants can behave differently on different social media groups (Spears & Lea, 1992; Turner, 1982), particularly with regard to social comparison where individuals can switch on a social identity that conforms to group norms and behave stereotypically. In one such case, groups

of students found themselves positively comparing their social experience to student groups in other colleges (Turner & Reynolds, 2012).

Participants reported that behaviour on social media was at times negative, while using both non-anonymous and anonymous social media online. Research suggests that online aggression exists for both anonymous and non-anonymous online engagement but that online behaviour can be influenced by the saliency of the social identity (Mishna et al., 2015; Reicher et al., 1995; Rost et al., 2016; Spears, 2017). Whilst WhatsApp was used as a channel to complain by students in a negative manner, a group of students used Yik Yak for anonymous negative postings in response to a face to face incident involving two participants in this study. It could be suggested that in the latter case, which was an outlier in this study, students wanted to remain anonymous to protect themselves from social disapproval (Mann et al., 1982) or that the group behaviour was in line with the implicit and explicit group norms (Spears, 2017). In this case, according to SIDE, visual anonymity may not have influenced negative behaviour on Yik Yak, rather the group identity saliency may have influenced the behaviour of the group (Spears, 2017; Spears & Postmes, 2015). An area of future research could examine how students are behaving anonymously in online groups and if anonymity has any effect on college adjustment for undergraduate students, especially as online interaction is encouraged during the COVID-19 pandemic.

While it is commonplace to use more than one social media site and be part of many groups across many social media platforms, research has shown that social media use positively predicts time spent on co-curricular activities, but negatively predicts academic engagement (Junco, 2011). Problematic social

media use can induce a feeling of overload where students may find it difficult to manage the demands of college (Whelan et al., 2020). Furthermore, the need to belong to multiple social media groups expedited by FOMO could negatively impact college adjustment and meeting the need to belong may not be satisfied through using social media or instant messaging. In today's environment, social media facilitates dealing with simultaneous relationships among social identities for the student. Multiple roles and identities across multiple online groups and possibly multiple social media accounts may distract students from other tasks such as academic demands (Dunbar, 2018; Whelan et al., 2020).

### **3.5.3 Overall**

The findings from this study emphasize that social media is an intricate facilitator of a student's support network. Social media can be used constructively but also may negatively impact academic performance and potentially college adjustment with respect to managing multiple online simultaneous social interactions (Whelan et al., 2020).

In the current study, across both colleges, students tend to establish private online groups for the purpose of satisfying the needs for frequent communication for social, emotional and academic purposes (Chen, 2011; Wang et al., 2012; Yang & Brown, 2013). Within these groups, peers influenced attitudes toward: class attendance and participation; feelings about the course; and sharing of information on college assignments. Group norms and social identity influenced social media user generated content (McKenna & Green, 2002; Spears & Lea, 1990). Each online group had its own set of group norms, therefore being members of multiple online groups suggests that students had to manage multiple social identities across multiple groups and multiple social

media platforms. Maintaining friendships on social media may have introduced issues surrounding the capacity to manage a larger network of friends which in turn required a significant investment of time for students.

#### **3.5.4 Limitations and future research**

Attendance at interviews were problematic in the UK university, some students failed to show for the interview or in the case of two of the interviews, only one student showed up, so group interviews in two instances were not possible. The one to one interviews proceeded but the data was possibly not as rich coming from these, possibly due to lack of conversation with peers, the participants tended to answer the questions and had to be coaxed to elaborate. In addition, some of the interviews in the UK university had only two participants. Whilst efforts were made to ensure a broad range of participants and courses in the Irish institute, only students from one course in the UK university participated. The dataset consisted of 15 interviews, 70 students in total. Amongst the total participants, there was a gender imbalance, there were more females than males with the exception of one course. Participants from the UK university were all female.

Discussions were limited to social media usage and did not include online gaming communication platforms such as Discord. Considering the growth of the gaming industry and the demographic of gamers (Brown, 2020), online gaming groups could have an impact on college adjustment and could be considered in future research. The impact of the COVID-19 pandemic has resulted in an increased use of technology by students. Furthermore, social distancing measures introduced by governments across the globe, are having an impact on face to face data collection but also present opportunities to move

data collection online. Future research could use gamer discussion and streaming platforms, such as Discord or Twitch, to collect data specific to the student gamer population.

Participants may not have represented themselves in a true fashion during the interviews. Efforts were made on behalf of the researcher, through active listening, to ensure that everyone had a chance to speak but at times other participants took over the discussions. Negative views within the groups, were almost contagious, perhaps this was an attempt to bond where one group in particular focused on negative college experiences (Bosson et al., 2006), these negative emotional states may have influenced the data. In addition, the interviews were held from February to April 2017 as students approached the end of the second term, it is possible that participants were feeling under pressure to deliver coursework or beginning to feel tired coming towards the end of the year. Future research may consider that students' opinions of college adjustment may change as they progress through the academic year when they become more familiar with the course and their classmates.

Furthermore, the interviews were conducted in 2017, three years before the COVID-19 pandemic, therefore issues relating to COVID-19 were not addressed in interviews. Although it is important to note, considering the changes to education at institute and university level, student attitudes towards social media use in college or university may have changed. In addition, college adjustment issues and processes are altered where inductions are online and students may find themselves working from home with little financial support due to local lockdowns. Whilst participants in this study found that social media and instant messaging are a convenient way of working in groups (albeit a slow

process), in the current climate, that view may have changed. Students have possibly become more efficient at working online and possibly found more suitable online platforms that facilitate the demands of group work in the current COVID-19 pandemic. Future research could consider if students can work more efficiently on online platforms to complete coursework during the pandemic, and furthermore how they have adjusted their learning to cope with online delivery and organisation of group work.

It is worth considering that new college adjustment issues may have changed due to the current global pandemic. It is difficult to project what those changes may be, but it is possible that new academic demands may include managing their online work and embracing independent learning at an earlier stage than was captured in this analysis. In the current climate, students may feel nervous in attending lectures and may opt to defer courses or not attend face to face lectures. In relation to independent learning, students in high school are currently experiencing independent learning from home, so some academic challenges may have changed since this analysis where 'independent learning' may not be as prevalent for future first year student cohorts in university and college. In addition, digital poverty may impact heavily on education in relation to access to resources, such as laptops or broadband and these issues may comprise of further college adjustment issues. Furthermore, financial difficulties may amplify the digital divide for students and subsequently result in attrition from college or influence decision making around college applications.

As with all qualitative data collection methods, the role of the researcher can influence the quality of the data, one of the principal measures was how the researcher was introduced to the student groups. One of the issues with the



role of the researcher in the Irish institute, was the dual role of being a student and a lecturer in another faculty. Students in both colleges were given the same verbal information about the researcher prior to participating in the group interviews. This may have influenced data collection in the Irish institute, but there was a possibility that the students would see the researcher on campus after the interview, therefore it was considered important that students were made aware of the dual role in the institute.

### **3.5.5 Conclusion**

The review of the design and development of college adjustment and social media scales demonstrates a lack of reporting on item identification and construction. The process followed by the current study was based on best practice recommendations (Carpenter, 2018; Rust & Golombok, 2009; Sigerson & Cheng, 2018), correspondence with authors or colleagues of the SACQ (Baker & Siryk, 1989) and the CAT (Pennebaker et al., 1990). In order to identify current college adjustment issues, it was deemed necessary to speak to students to gain an insight into college experiences. This appears to be an area that is currently overlooked in college adjustment scale development literature.

Two research questions were addressed in this study: the effect of blended (face to face and online) interactions on college adjustment and the new experiences that students adjust to across years, courses and colleges. The results from the current study indicate that students will continue to use social media for social, emotional and academic support, in attempts to satisfy needs such as the need to belong and furthermore to establish social identities (Baumeister & Leary, 1995; Chen, 2011; Katz et al., 1974; Rubin, 2002; Serpe, 1987; Stryker & Burke, 2000; Tajfel & Turner, 1979).

Considering the key findings, the five over-arching themes will be taken forward into chapter four, with a view to identify and construct items for the student adjustment scale.

## **Chapter 4: Design and Factor Analysis of the Student Adjustment Scale**

In chapter three, groups of students were interviewed in order to identify potential items for the new scale in relation to college adjustment issues and the use of social media during college adjustment. The results of a thematic analysis highlight that students' social media and instant messaging use is related to gratifying the need for perceived social and academic support (Friedlander et al., 2007; Hampton et al., 2011; Madge et al., 2009; Manago et al., 2012; Pittman & Richmond, 2008). The findings suggest that negative aspects of using social media and instant messaging, such as online social exclusion, do not seem to deter students from establishing and maintaining friendships online, regardless of college or university social media usage policies. In addition, students tend to communicate with friends across multiple social media and instant messaging sites and are members of multiple online groups, where multiple groups over multiple sites can consume time and effort and possibly result in cognitive overload (Lea & Spears, 1991; Turner, 1982; Whelan et al., 2020). Furthermore, online and face to face interaction with friends may exert an influence over college behaviour and attitude (Lea & Spears, 1991; Turner, 1982).

### **4.1 Background**

As discussed in chapter two, literature in the area of college adjustment and social media use report mixed findings, which could be attributed to the inconsistency of use of social media scales. Furthermore, initial identification of items in scales is not reported in college adjustment or social media measurement literature. The college adjustment literature generally includes reliability analysis and some form of an exploratory factor analysis (EFA), either

in the form of a principal components analysis (PCA) or an EFA (see Table 4.1). Furthermore, based on the findings from chapter three, the role of social media needs to be considered in college adjustment where social media scale validation has come under recent criticism for a number of reasons including the lack of rigorous psychometric testing, see Table 4.2 (Sigerson & Cheng, 2018). Most college adjustment and social media studies are limited to Facebook but considering the plethora of social networking sites that are currently freely available to students, the scope of social media research in college adjustment could be broadened to sites that were discussed by the participants in chapter three such as: WhatsApp, Facebook Messenger, Instagram and Snapchat.

Table 4.1

*Summary of college adjustment scale construction*

Scale	Authors	Year	N	No. Items	Cronbach's $\alpha$	FA
College Adaptation Questionnaire (CAQ)	Crombag	1968	Unknown	18	$\alpha = .83$	X
Student Involvement Questionnaire (SIQ)	Pascarella & Terenzini	1980	763	34	peer-group interactions $\alpha = .84$ ; Interactions with faculty $\alpha = .83$ ; Faculty concern for student development and teaching $\alpha = .82$ ; Academic and intellectual development $\alpha = .74$ ; Institutional and goal commitments $\alpha = .71$	PCA
College Student Experiences Questionnaire (CSEQ)	Pace	1984, 1990	3000+	150+	The Quality of Effort scales $\alpha$ ranges between .74 to .92, the College Environment factor $\alpha$ ranges between .70 to .75, and the Estimate of Gain factor $\alpha$ ranges between .78 and .87 (Pace, 1984, p. ??) for 1984 and 1986 administrations respectively: SACQ: $\alpha = .91$ & $\alpha = .92$ ; academic adjustment $\alpha = .82$ & $\alpha = .87$ ; social adjustment $\alpha = .88$ & $\alpha = .88$ ; personal/emotional adjustment $\alpha = .82$ & $\alpha = .79$ ; & attachment $\alpha = .89$ & $\alpha = .86$	X
Student Adaptation to College Questionnaire (SACQ)	Baker & Siryk	1984, 1986, 1989	216 & 163	67		EFA
College Life Task Assessment Instrument (CLTA)	Brower	1994	587	35	$\alpha = .73$	PCA

Scale	Authors	Year	N	No. Items	Cronbach's $\alpha$	FA
College Adjustment Test (CAT)	Pennebaker et al.	1990	547	19	$\alpha = .79$	X
The College Adjustment Questionnaire	O'Donnell et al.	2018	301	14	Educational Functioning $\alpha = .89$ ; Relational Functioning $\alpha = .86$ ; Psychological Functioning $\alpha = .79$	EFA
Inventory of New College Student Adjustment (INCA)	Watson & Lenz	2018	474	14	Supportive network $\alpha = .83$ ; Belief in Self $\alpha = .77$	CFA

<sup>a</sup> "X" = not documented in research.

Table 4.2  
*Summary of social media scale construction*

Scale	Authors	Year	N	No. Items	Reliability: Cronbach's Alpha	FA
Internet Social Capital Scale	Williams	2006	527	20 items for 2 scales (online and offline)	Online: Bonding $\alpha = .896$ ; bridging $\alpha = .841$ ; Offline Bonding $\alpha = .859$ ; bridging $\alpha = .848$	FA
Facebook Intensity Scale	Ellison et al.	2007	286	8	Overall $\alpha = .83$	X
The Facebook Questionnaire	Ross et al.	2009	97	28	Labelled attitudes $\alpha = .85$ ; online sociability functions $\alpha = .74$	PCA
The Facebook Intrusion Questionnaire	Elphinston & Noller	2011	342	8	Overall $\alpha = .85$	PCA
The Social Media Use Integration Scale	Jenkins-Guarnieri et al.	2013	627	10	Overall $\alpha = .914$ ; social integration and emotional connection (SIEC) $\alpha = .893$ ; integration into social routines (ISR) $\alpha = .828$	EFA
The Media and Technology Usage and Attitudes Scale	Rosen et al.	2013	942	60	Smartphone usage $\alpha = .93$ ; General Facebook usage $\alpha = .97$ ; Internet searching $\alpha = .91$ ; E-mailing $\alpha = .91$ ; media sharing $\alpha = .84$ ; text messaging $\alpha = .84$ ; video gaming $\alpha = .83$ ; online friendships $\alpha = .83$ ; Facebook friendships $\alpha = .96$ ; phone calling $\alpha = .71$ ; Television viewing $\alpha = .61$ ; positive attitude $\alpha = .87$ ; Anxiety and dependence $\alpha = .83$ ; negative attitude $\alpha = .80$ ; multitasking preference $\alpha = .85$	EFA

Scale	Authors	Year	N	No. Items	Reliability: Cronbach's Alpha	FA
The social media motivations scale	Orchard et al.	2014	244	40	Procrastination $\alpha = .893$ ; freedom of expression $\alpha = .875$ ; conformity $\alpha = .805$ ; information exchange $\alpha = .817$ ; new connections $\alpha = .791$ ; ritual $\alpha = .802$ ; social maintenance $\alpha = .757$ ; escapism $\alpha = .820$ ; recreation $\alpha = .831$ ; & experimentation $\alpha = .594$	PCA
The Facebook Relationship Maintenance Behaviours Scale	Ellison et al.	2014	614	5	Overall $\alpha = .901$	PCA
The Impact of Student's Social Network Use Scale	Topaloglu et al.	2016	1005	13	Overall $\alpha = .882$ ; the aims of social network use $\alpha = .874$ ; social network communication preferences $\alpha = .858$	PCA & EFA
Social Networking Time Usage Scale (SONTUS)	Olufadi	2016	> 1,800	29	relaxation and free periods $\alpha = .91$ ; academic related periods $\alpha = .89$ ; public places related use $\alpha = .85$ ; stress related periods $\alpha = .86$ ; motives for use $\alpha = .83$	PCA
The Psycho-Social Aspects of Facebook Use (PSAFU)	Bodroža & Jovanović	2016	804	26 items (43 items long version)	Internal consistency of factors range between $\alpha = .76$ (virtual self) and $\alpha = .92$ (compensation)	EFA
The Social Media Disorder Scale	Van den Eijnden et al.	2016	2,198	9 items (27 items long version)	Three samples of data 1) $\alpha = .81$ ; 2) $\alpha = .76$ ; 3) $\alpha = .82$	EFA



Scale	Authors	Year	N	No. Items	Reliability: Cronbach's Alpha	FA
The Social Networking Fatigue Scale	Lee et al.	2016	201	32	SNS fatigue $\alpha = .86$ ; system feature overload $\alpha = .82$ ; system pace of change $\alpha = .87$ ; communication overload $\alpha = .82$ ; information relevance $\alpha = .90$ ; information overload $\alpha = .87$ ; information equivocality $\alpha = .87$ ; system complexity $\alpha = .90$	EFA
The Social Media Addiction Scale (Chinese)	Liu & Ma	2018	619	28	Preference for online social interactions $\alpha = .83$ ; mood alteration $\alpha = .84$ ; negative outcomes and continued use $\alpha = .83$ ; compulsive use/withdrawal $\alpha = .86$ ; salience $\alpha = .79$ ; relapse $\alpha = .82$	EFA
The Friendship Quality on Social Network Sites Questionnaire	Verswijvel et al.	2018	1,087 (1,695 friends-hips)	16	Satisfaction $\alpha = .93$ ; companionship $\alpha = .94$ ; help $\alpha = .91$ ; intimacy $\alpha = .94$ ; self-validation $\alpha = .87$	EFA
The Social Networking Sites Usage and Needs Scale (SNSUN)	Ali et al.	2020	162	18	Composite reliability: Diversion = .827; Cognitive needs = .826; affective needs = .824; personal integrative needs = .882; social integrative needs = .810	EFA

*Note.* The table was adapted from Sigerson and Cheng (2018).

<sup>a</sup> "X" = not documented in research.

## **4.2 Current study**

The current chapter has two objectives while following scale development guidelines (Rust & Golombok, 2009). Firstly, it aims to design the student adjustment scale, item identification will be based on the results of the thematic analysis in chapter three. Secondly, it aims to conduct a PCA to reduce the scale size and determine the number of components and furthermore, reliability tests on the subscales and overall scale will be conducted. Correlation analysis will be used to identify the intercorrelations of the components of the new scale.

## **4.3 Design of the new scale**

The pilot scale items were constructed based on the overarching themes and sub-themes identified in chapter three. Five overarching themes relevant to college adjustment were identified: 1) social cohesion: the student perception of social connection to the course, institute and friends; 2) social exclusion: online and face to face experiences of the feeling of social exclusion that can affect college adjustment; 3) academic and interpersonal skills: how students develop and manage new ways of learning and their interpersonal skills; 4) peer group influences: how students are influenced both negatively and positively in relation to motivation and friendships; 5) social media and instant messaging etiquette: how social media is used by students under different situations and how students conduct themselves online according to unspoken rules of online etiquette. All five overarching themes will be represented in the pilot scale. The next section now turns to describing the process behind designing the new scale, which was adapted from Rust and Golombok (2009).

#### **4.3.1 Steps 1 & 2 - The purpose and type of questionnaire**

The new scale will measure current issues in college adjustment including the use of social media. It is person-based rather than a knowledge-based questionnaire. A weighted blueprint was not developed for this scale because the sub-themes from the results of the qualitative analysis provided this structure.

#### **4.3.2 Step 3 – Identify questionnaire content**

The items in the new scale are theory and data driven. The initial interview protocol was designed prior to conducting the student group interviews in chapter three. The interview questions were informed by the college adjustment literature and the data was analysed using thematic analysis (Braun & Clarke, 2013a). The items in the new scale are based on five overarching themes and 17 sub-themes.

#### **4.3.3 Step 4 – Write the items**

Each of the sub-themes were brought forward for consideration to be included in the questionnaire. The quotes that were most prominent with regard to common opinion were selected to form an item on the scale (see Table 4.3).

Table 4.3

*Breakdown of overarching themes and sub-themes*

No.	Sub-theme	SE	SC	PG	SME	AIS
(1)	Fear of missing out	√				
(2)	Online visibility of old friends drifting	√				
(3)	Online and offline impact	√				
(4)	Online peer support		√			
(5)	Friendship maintenance		√			
(6)	Online social bridging		√			
(7)	Student sense of belonging		√			
(8)	Friendships as positive connotations of college			√		
(9)	Motivation and competition			√		
(10)	Influence of college and class size			√		
(11)	Online messaging etiquette				√	
(12)	Distinction between online and offline friends				√	
(13)	Online usage				√	
(14)	Independent learning					√
(15)	Managing differences between school and college					√
(16)	Lack of self-confidence					√
(17)	Social anxiety					√

Notes: SE=Social Exclusion, SC=Social Cohesion, PG=Peer Group Influences, SME=Social Media and Instant Messaging Etiquette and AIS=Academic and Interpersonal Skills.

The items for the questionnaire were constructed firstly by identifying quotes that had content similarities. For example, considering the sub-theme online peer support, in some cases students used social media to complain about the course or the institute. These quotes were grouped and an item using the same tone as the students was constructed by the researcher. The item “I find that it’s easy to complain about the course or institute in online group chats” encompasses five similar quotes. Similarly, the item “the online group chat instils a sense of community in the class” was constructed based on five quotes that referred to positive experiences in using the class group chat. Please see Table 4.4 for an example of item construction under the social cohesion overarching theme.

Table 4.4

*An example of item construction for the overarching theme Social Cohesion*

Sub Theme	Item	Quote
		"I feel like the conversation just gets a bit boring after a while when you only see them on Facebook, it's like how are you what have you been up to and it's just like telling stories rather than having conversations about things"
	"I find that conversation gets boring when I only see my old friends on social media"	<p>"I'll maintain friendships but I feel like they won't get any stronger until I see them in person"</p> <p>"I have people that I haven't spoken to in 3 years still on my Facebook and we still like things and whatever and comment on things but I don't talk to them it's strange like if they comment on something I'll comment on their comment but wouldn't send them a message going 'hey' or whatever it's just .. it's actually quite strange I really should just unfriend them"</p>
		"probably online would be my main form of communication just because they're so far away. We would have to plan and organise months in advance if we wanted to do something together so .."
Friendship Maintenance		"I have a load of friends who live abroad .. it wouldn't be talking all the time, it would come in waves, keep in touch with a lot of them , depending on what's happening. If someone is travelling around, you may see them but yeah it would be mainly maintaining friendships and they live so far away that you wouldn't be meeting up with them anytime soon."
	"I use instant messaging and social media to keep track of what my old friends are doing"	<p>"it's great for international friends, not just ones in your locality, you're not arsed or just get the time to go see from time to time. One of my best friends, my actual best friend, lives in [place] in [Country] and without Skype or Facebook chat I would never get the chance to talk to him other than letters which is a bit archaic."</p> <p>"I'm finding it really hard to try and see people and stuff like that, cos like I'm in college during the week and I work Friday, Saturday, Sunday nights so I have no time to see people so like without Facebook and stuff like that, there's a lot of people that I wouldn't have talked to in like months so I think it makes a huge difference"</p> <p>"you can even get to stage where you could be sitting in [college] and you could feel like you're sitting with all your mates"</p>

Sub Theme	Item	Quote
Online Social Bridging	"I feel that I would not have gotten to know my classmates if it wasn't for social media and/or instant messaging"	<p>"I do think that Facebook was good when you added someone, you could see 'oh I actually have a few mutual friends with them', and then that's a conversation started for the next day"</p> <p>"yeah I do think that it quickens up, how you communicate with people and get to know people."</p> <p>"We have a Facebook group for the whole year so even like people who are quite quiet just post on Facebook and we all just let each other know what's going on through that"</p> <p>"it's very handy for avoiding an awkward social situation of going 'sorry what's your name again?'"</p>
	"I find that online interaction makes face to face interactions easier"	<p>"I knew absolutely no one in this college emm but with Facebook and snapchat, em you know, from induction day you're friends with everyone in the class Facebook from then so you 've like you get to know them quite well straight away, more than if Facebook or snapchat wasn't there if you know what I mean? Then you got an instant access to message them or to see what each other are doing and that kind of thing straight away than actually having to find out all that information in person"</p> <p>"you just like set events on Facebook and stuff like that, and then you'll know who's going because they'll say and stuff like that"</p> <p>"it's easier to get to know people by knowing them on Facebook. We have Facebook group for our course to put things in that are coming up and stuff, plan nights out together and stuff"</p> <p>"make you more comfortable around someone if you get to know what they say on Facebook and stuff or you know what they like"</p>

Sub Theme	Item	Quote
Student Sense of Belonging	"I feel that University/College social life is non-existent"	"I think there needs to be a higher social media presence for this college"
		"I really like the college but sometimes I do feel that you're just kind of like walking in here and like 'Is this a University?' 'Is it just a place people come sometimes?'"
		"there was nothing else really organised online as such"
	"I just go to lectures and go home"	"there's nothing keeping you here, there's no investments back into the students"
		"I think because you see our college doesn't really have that many societies and things like that so it's easier to like become involved in college community if you're in societies and stuff, cos people have the same interest so that's probably hard for this college in particular"
		"I just come to uni come and sit down at lecture and go home, there's nothing else that's keeping me here"
		"I like would go into [another college name] just to go see my friends like, the majority of my school kinda went there so sometimes I just knock up there to meet my friends for lunch and I'll just end up talking to people all day and I'll just like stay there and just hang out"

A 7-point Likert type scale is used to capture the diverse view of students (1 = 'strongly agree' to 7 = 'strongly disagree'). The option to 'neither agree nor disagree' was available to minimise the risk of participants not completing the questionnaire if they found questions unanswerable. Research suggests that using a 7-point Likert type scale results in stronger relationships with t test results (Lewis, 1993), furthermore 7-point scales seem to be more suited to online distribution of questionnaires or scales (Finstad, 2010). According to Krosnick and Presser (2009), there is no difference in research regarding validity and reliability between 5-point Likert type scales and 7-point Likert type scales. The 7-point scale was chosen because participants' views in the group interviews varied according to their college experience, there was a range of opinion with regard to each question asked on the questionnaire. For example, "my friends make it easier to get up in the morning", some students were very strong on this point, others found that while it was important, it was not the most important thing about college. It was deemed possible that the 5-point scale might limit the experience, possibly give incorrect data and possibly not represent students' feelings. Additionally, the College Adjustment Test (CAT; Pennebaker et al., 1990) utilised a 7-point Likert type scale.

#### **4.3.4 Step 5 – Designing the questionnaire**

Fourteen demographic questions were grouped as background items in the scale. Most questions contained drop down menus with predefined choices to facilitate speed of choice and to reduce ambiguity in responses.

#### **4.3.5 Step 6 – Scoring keys**

The new scale and any components were scored by taking the sum of the individual items in the scale.



#### **4.3.6 Step 7 – Pilot questionnaire**

According to Rust and Golombok (2009), the number of respondents of the questionnaire must be one greater than the number of items, there were 418 respondents to the pilot questionnaire and 171 items.

#### **4.3.7 Content and face validity**

To address content validity in chapter three, participants were involved in the design of the questionnaire where member checking was conducted to ensure that the researcher had taken accurate notes. The notes were read to the participants at the end of the interview and agreement was obtained (see Section 3.3.5.4). The next step in content validity was to send a series of drafts of the questionnaire to two supervisors for review and feedback (see Table 4.5). The items were phrased using the tone and wording of the students. The language used in the questionnaire was extremely important because the students needed to understand and relate to the questions.

Table 4.5

*Summary of process to establish content validity*

Draft	Items	Supervisor feedback	Scale reduction
Draft 1	8 demographic items	Reword some items for clarity on types of friends	172 items
	184 scale items	Break items into sub-groups with sub-headings. Items were organised according to experiences that students encountered during their first few weeks in college.	
Draft 2		Add a sudoku puzzle to break up the questionnaire	no reduction
		Instructions for the sections of the scale were included	
Draft 3	14 demographic items	add new demographic questions: year of birth and nationality	171 items
		Add new demographic questions: country, confirmation of undergrad student, confirmation of mature student, highest level or educational qualification, English as a first language	

As part of the review on the first draft, the items were grouped into 18 sections in the questionnaire, see Appendix G for the pilot scale.

Although face validity is considered superficial and weak measure of validity (Drost, 2011), it is still important to ensure that the participants interpret the items correctly (DeVon et al., 2007). This was tested by distributing the pilot questionnaire with feedback questions on blocks of items. The feedback questions allowed the participant to comment on the section, with regard to what they thought was being asked and if they had any problems interpreting the questions. This feedback was mainly used to modify grammar and phrasing of some items and to ensure that the items were clear and easy to understand. This resulted in no further addition of new items, as the participants felt that the questionnaire was long.

## 4.4 Method

### 4.4.1 Participants

Data was collected from undergraduate students during the first term in 2018 (October to December), 501 students participated in this study, of these, 418 completed the questionnaire in full. The final sample included 175 males (42%), 235 females (56%), two transgender males (0.5%), three gender variant (non-conforming) (0.7%) and two undisclosed (0.5%). The mean age was 22 (SD = 6.03, range 18 to 58) and consisted of 344 students (82%) from an Irish institute and 74 from a UK university (18%). Participants were from a mixture of different courses, the final sample included 177 (42.4%) business students, 158 (37.8%) psychology students and of the remaining 82 (19.6%) participants, 58 were from courses associated with film and creative technology (15.5%), and 25 were from courses associated with humanities (5.9%).

Of the 418 participants, 173 (41%) were in first year, 89 (21%) were in second year, 46 (11%) were in third year and 110 (26%) were in fourth year. Fifty students (12%) were mature and 368 were not over the age of 23 (88%) when they started their degree. Nationalities of the participants varied with Irish being the most prevalent at 304 participants (72.7%), followed by British at 46 (11%), English at 20 (4.8%) and the remaining 48 (11.5%) consisted of Afghan, American, Australian, Brazilian, Egyptian, Filipino, Finish, German, Greek, Italian, Lithuanian, Romanian, Russian, Swedish, Swiss, Vietnamese, and other non-specified. As all students were studying in English, their proficiency for the English language was deemed adequate for this study.

In total, 286 participants (68.4%) stated that they lived with parents/caretaker, 43 (10%) lived in private accommodation, 42 (10%) lived in

their own home, 10 (2.4%) lived in university halls/accommodation and the remainder was unspecified. Out of the 418 participants, 224 (53.5%) attended college/university straight after school, the remaining 194 (46.5%) took a break before starting college/university. Of those who did not attend straight from school, 93 (22.3%) reported that they attended another course, four (<1%) travelled, 52 (12.4%) worked full-time, 15 (3.6%) worked part-time and 30 (7.2%) other participants chose not to disclose any details. Of the 418 participants, 254 (60.7%) reported that secondary education was their highest qualification, 96 (23%) reported a post-secondary education, 16 (3.8%) reported a vocational qualification, 31 (7.4%) already had an undergraduate degree and one participant reported a post-graduate degree.

#### **4.4.2 Design**

This study used a factor analysis design with 171 items and 14 demographic variables, to reduce the dimensions of the scale. The 171 items will be loaded as components.

#### **4.4.3 Materials**

##### **4.4.3.1 The student adjustment scale.**

The 171 item pilot scale is intended to examine new college adjustment issues including the role of social media. The pilot college adjustment scale is a 7-point Likert scale: 1 = 'strongly agree' to 7 = 'strongly disagree' (see Appendix G). In addition, there are 11 demographic questions that were either prepopulated drop-down lists or check boxes. Furthermore there are three items that allowed free text: course name, age and year of birth which allowed students to enter the course name and digits for age and date of birth.

#### **4.4.4 Procedure**

Ethical approval was granted in the Irish institute and the UK university (see Appendix H). Active recruitment took place in the UK and Ireland. The researcher approached individual lecturers and course co-ordinators to access class groups. In the UK university, students were required to sign up in advance of the data collection sessions. Participation in the study was optional for all students. The data collection period ran over the originally planned timeframe. The stated date to allow participants to request removal of their data changed but is not reflected in the ethics documentation. The researcher was present at all data collection sessions and the participants were verbally informed of a new date during the sessions.

The online questionnaire was created using Qualtrics. The link to the questionnaire was provided on the day to the students. In order to answer questions and encourage participants to complete the questionnaire, the researcher stayed for the duration of the data collection session. Students in the UK university were awarded two participant pool credits for attending the data collection session. Students in the Irish institute did not receive course credits for participation. The average completion time was 30 minutes.

Information and consent forms were provided to participants as part of the online questionnaire, these included information on withdrawing their data from the study, confidentiality and anonymity. After completing the questionnaire, participants were provided with debriefing information and the researcher's contact details should they have questions.

#### **4.4.5 Analysis**

This study was designed to reduce items in the student adjustment scale using a principal components analysis in SPSS version 24.

### **4.5 Results**

#### **4.5.1 Data screening**

All data was screened for possible input mistakes in Excel, all partially completed responses to the questionnaire were removed. Logic was built into the online questionnaire whereby it was difficult for a participant to input the incorrect data. The column for course name was categorised based on participant's free text input.

#### **4.5.2 Principal components analysis background**

Previous college adjustment and social media scale literature tended to carry out dimension reduction using a factor analysis (FA) or principal components analysis (PCA) (Baker & Siryk, 1986; Pennebaker et al., 1990). In some literature the terms PCA and FA are used interchangeably and considered to do the same thing (Pallant, 2013). Both empirical approaches are used for scale reduction and for capturing the variance in a smaller set, but there is a distinct difference between the two. PCA is a reduction method that is used to reduce the scale size into a smaller scale that still contains a lot of the information in the large scale. The original variables are categorised into components using a new set of linear combinations (Pituch & Stevens, 2016). Factor analysis identifies underlying factors or constructs for a latent variable which cannot be measured by a single variable. Instead, the latent variable is seen through the relationships it causes in a set of variables (Pituch & Stevens, 2016). Tabachnik and Fidell (2014) state that PCA is a better choice if the

requirement is simply for an empirical summary of the dataset. Whereas Pituch and Stevens (2016) demonstrates a preference for PCA to transform variables into components, this approach is particularly common when scales need to be reduced in size, PCA is normally the first stage of an exploratory factor analysis (EFA).

Considering the participant feedback in the pilot study, there were too many items in the new scale. A scale that is too complex or long can result in problems during data analysis where participants may experience fatigue or be acquiescent in their responses (Krosnick & Presser, 2009). Therefore, the pilot scale needed to be reduced. A PCA was selected for component identification and dimension reduction in this study.

#### ***4.5.3 Principal components analysis assumptions***

Before progressing with the PCA, it is imperative to assess the suitability of using PCA on the current dataset. Please see Appendix I for the codebook for the demographic and scale variables.

Firstly, the sample size must be sufficient for a PCA. Research has differed according to guidelines for sample size in order to perform a factor analysis. Focus began to shift from the sample size being a function of the number of variables (Stevens, 1995) to highlighting the importance of communalities along with the number and size of factor loadings (MacCallum et al., 1999; Mundfrom et al., 2005). According to Pituch and Stevens (2016) in their summary of the work of Fabrigar and Wegener (2012), they suggest the minimum guidelines that when the average communalities are small ( $< 0.40$ ) and there are two substantial loadings on some factors then a sample size of

400 or more is needed for a factor analysis. Therefore, the sample size of 418 participants in the current study is sufficient for a PCA.

Secondly, prior to performing the PCA, the strength of the correlations between the items was assessed. Examination of the correlation matrix revealed many coefficients of .3 and above, variables with coefficients < .3 were identified (Pallant, 2013). There was no evidence of highly correlated variables with coefficients exceeding .9 (Field, 2005). Assumptions of sphericity ( $\chi^2 = 36787.126$ ;  $p < 0.01$ ) and sampling adequacy were met (Kaiser-Meyer-Olkin = 0.786), exceeding the recommended value of .6 (Kaiser, 1970, 1974) at .786 and Bartlett's test of sphericity (Bartlett, 1954) reached statistical significance, supporting the factorability of the correlation matrix.

#### ***4.5.4 Principal components analysis***

The nature of the PCA is that it is often iterative based on subjective choices made by the researchers. Therefore, iterations are accompanied with a narrative explaining the end result. The narrative includes rotation type, factor extraction rules and factor confirmation such as a scree plot test.

There are two approaches to rotation: orthogonal and oblique. Orthogonal approaches tend to result in results that are less complicated to interpret but they make the assumption that the components are independent. Oblique approaches allow for the factors to be correlated but they are more complicated and can be difficult to interpret (Pallant, 2013; Tabachnick & Fidell, 2013).

Varimax rotation was selected as it was expected that the components would not correlate (Field, 2005), however, this selection was based on the researcher's misinterpretation of the rotation method, therefore the components should have been allowed to correlate.



The 171 items from 418 participants, who completed the scale, were subjected to PCA using SPSS version 24 with Varimax rotation to determine the component structure. Any missing values were excluded from the PCA by excluding cases pairwise. The rotated components were converged in 50 iterations with Eigenvalues over one and coefficients  $< .4$  were suppressed. Kaiser is a widely used criterion that retains factors of Eigenvalues greater than one, this rule generally means that only factors that are most important will be retained (Pituch & Stevens, 2016). The result revealed the presence of 22 components with Eigenvalues exceeding one, explaining 50.16% of the variance.

The scree plot requires subjective judgement in identifying the number of factors (Pituch & Stevens, 2016) therefore inspection of the scree plot revealed a clear break between the sixth and eleventh component. Using Cattell's (1966) scree test, it was decided to test 11 components. The 11 component model explained 37.03% of the variance. However, the eleventh component violated model assumptions where Cronbach's  $\alpha = .056$ . The item "I have a lot of work to do to make sense of assignments" relates to the questionnaire section 'Independent learning'. It was grouped into a component relating to online interactions, so it was removed due to inconsistency within the component.

Closer inspection of the loadings resulted in a 10 component model. The structure was comprised of 95 items and accounted for 35.54% of the variance. Two components violated model assumptions: the fifth component (Cronbach's  $\alpha = .515$ ) and the tenth component (Cronbach's  $\alpha = .233$ ). A further iteration involved testing eight components that explained 32.30% of the variance. An inspection of internal reliability revealed that the seventh component violated

model assumptions with Cronbach's  $\alpha = .36$ . Further tests of a seven component model explained 30.41% of the variance but the sixth component violated model assumptions (Cronbach's  $\alpha = .515$ ).

The final structure resulted in a six component model, comprised 76 items and accounted for 28.41% of the variance with acceptable overall internal reliability of Cronbach's  $\alpha = .911$  (see Table 4.6). While the cumulative variance may be considered low, the consideration that college adjustment is a complex area of measurement needs to be taken into account. There are possibly components that are specific to individuals or a small group that are not measured in this scale. The new scale will measure new college adjustment issues that includes the role of social media, there are other college adjustment scales that measure other aspects such as homesickness and mental health issues (Kleinmuntz et al., 1960; O'Donnell et al., 2018; Pennebaker et al., 1990).

The communalities for the six component model were small ( $< 0.40$ ) but there were substantial loadings ( $> 0.60$ ) on two components (see Table 4.7). Therefore, the sample size of 418 was deemed suitable for this study (Pituch & Stevens, 2016).

#### **4.5.5 Structure of the six component model**

The structure of the new scale comprises six components and 76 items, Cronbach's  $\alpha$  for the overall scale = .911. Participant feedback on the pilot scale noted some items that were unclear, these items were not removed by the researcher prior to or during the PCA but were eliminated as part of the PCA process. The overall score of the scale is calculated using the six component scores. In some published scales, the overall scale reliability is not considered

because it is assumed that each component is measuring a different construct. Whilst the scale considers different constructs, it is also important to recognise that the college adjustment literature considers the overall college adjustment score (Baker & Siryk, 1989; Pennebaker et al., 1990). The overall score contributes to the interpretation of the adequacy of student adjustment to college.

The scale components were named by reviewing the item content of the top three loading items in each factor (Tabachnik & Fidell, 2014). The total scores of the components will be computed based on reversing item scores as indicated in the results of the PCA and adding the sum of all items. The new scale components are the following:

- Online social cohesion: This component contains 30 items and explains the behaviour around using social media when starting college. The 30 items have loadings that range from .404 to .619, it is the largest of the six and explains 11.29% of the variance, Cronbach's  $\alpha = .907$ .
- Social difficulties: This component contains 15 items and describes the difficulties in navigating new social circles during college adjustment. The 15 items have factor loadings that range from .411 to .738, and comprises 5.85% of the variance, Cronbach's  $\alpha = .839$ .
- Online social exclusion: This component contains 11 items and describes how online interactions can propagate feelings of exclusion, the items have factor loadings ranging from .429 to .656 and accounts for 3.55% of the variance, Cronbach's  $\alpha = .789$ .

- Academic and Interpersonal skills: This component contains seven items and describes the difficulties that students face in motivating themselves to complete college work. The seven items have factor loadings ranging from .414 to .559 and accounts for 2.87% of the variance, Cronbach's  $\alpha = .803$ .
- Losing connections with friends: This component contains seven items and describes the lack of time spent with old friends and the etiquette surrounding the use of social media around maintaining old friendships. The seven items have factor loadings ranging from .400 to .503 and accounts for 2.51% of the variance, Cronbach's  $\alpha = .670$ .
- Social interactions: This component has six items and describes the impact of friendships on college. The six items have factor loadings ranging from .422 to .585 and accounts for 2.33% of the variance Cronbach's  $\alpha = .613$ .

All six components in the scale are significantly intercorrelated which is evidence of internal convergent validity. None of the correlations exceed .8 which means that none of the components are measuring the same construct (Pallant, 2014). Using a Pearson correlation, all of the subscales were intercorrelated where the highest correlation was between online social exclusion and interpersonal skills ( $r = .39, n = 418, p < .01$ ). The lowest correlation was between social difficulties and social interactions ( $r = .19, n = 418, p < .01$ ). Please see Table 4.14 for the component intercorrelations.

Table 4.6

*Items contributing to each factor of the new scale with Cronbach's alpha scores*

Item No.	Component	1	2	3	4	5	6
<b>Component 1: Online Social Cohesion</b>							
93	I would feel disconnected with my life outside of University/College, if I didn't have instant messaging or social media	0.619					
89	I would feel out of touch with my old friends without social media and/or instant messaging	0.610					
92	I use instant messaging and social media to keep track of what my old friends are doing	0.585					
54	I feel that I would miss out on a social life if I didn't have social media accounts	0.580					
55	I find that online interaction makes face to face social interactions easier	0.574					
95	I feel included when I am part of my old friends' new online group chats	0.571					
134	I like to see if my friends have seen my online message	0.551					
91	I use social media and instant messaging to stay in touch with old friends who moved away	0.542					
94	I keep in touch with my old friends through social media and instant messaging more so than face to face	0.517					
52	I feel that I get to know my classmates better when I am friends with them on social media	0.515					
136	I frequently check my phone for messages	0.498					
71	I find that online group chats are really useful for group work in college	0.484					
106	I feel that I miss out on social events when I am not part of an online group chat	0.482					
75	Online group chats relieve the stress of group work	0.471					
70	I feel that it is necessary to create an online group chat to complete a group work assignment	0.465					
112	I miss my old friends if I don't see them	0.463					
96	I want to be included in my old friend's' group chats	0.461					

Item No.	Component	1	2	3	4	5	6
<b>Component 1: Online Social Cohesion</b>							
107	I feel that my friends are with me when I am chatting to them online	0.456					
98	I want to see what my old friends are doing without me	0.441					
21	Social media and/or instant messaging instils a sense of community in the class	0.440					
58	I feel excluded when I am not part of my classmates social online group chats	0.439					
139	All organisation for meeting up happens online	0.438					
56	My classmates are my friends on social media and/or instant messaging	0.436					
109	When I get frustrated in University/College, I vent to my old friends online	0.433					
118	It upsets me when I see online that my old friends are meeting up without me	0.431					
18	Social media and/or instant messaging makes me feel included in the University/College environment	0.420					
157	I feel awkward when people do not respond to my texts on group chat	0.419					
27	I feel that social media and/or instant messaging serves as a communal point for the class as the years progress	0.415					
62	I find that it's easy to complain about the course or institute in online group chats	0.409					
110	I want to meet my old friends, face to face, to just sit down and talk	0.404					
<b>Component 2: Social Difficulties</b>							
47	I don't know how to go up to my classmates and get to know them		0.738				
36	I find it difficult to make friends on my course		0.724				
46	I feel that my classmates don't know me		0.715				
48	I feel that I don't know my classmates		0.710				
49	I find it hard to make new friends as an adult		0.707				
42	I feel lonely at University/College		0.706				
28	I worry that I won't fit in with my classmates		0.626				
37	I feel like I am the only one with no University/College friends		0.619				
44	I feel that none of the people I have met in University/College like me		0.600				

Item No.	Component	1	2	3	4	5	6
<b>Component 2: Social Difficulties</b>							
45	I have no one to talk to at University/College		0.590				
41	I feel lonely in a large class		0.534				
39	I find that it's easy to be lonely in University/College		0.483				
38	I have spoken to everyone on the course (R)		-0.480				
29	If I had more University/College friends, I would love the course more		0.445				
86	I am really nervous that I will not be good at the assignments (R)		-0.411				
<b>Component 3: Online Social Exclusion</b>							
127	Sometimes, I feel under pressure by my old friends to make announcements on social media			0.656			
158	Sometimes I feel uncomfortable with content on group chats with old friends			0.559			
161	A negative online experience made me feel unwelcome in University/College			0.556			
159	Sometimes I feel uncomfortable with content on group chats with University/College friends			0.545			
116	I wish I chose the same career/academic path as my old friends			0.512			
104	I feel that my old friends are envious of the friends I've made in University/College			0.508			
140	I find it easier to have online only friends			0.496			
120	Online group chats keep me motivated to push myself further in my work	0.438		0.480			
167	I sometimes go to my old friends' University/College and stay there for the rest of the day			0.465			
133	I think it's intrusive when friends refer to my social media posts on other social media platforms			0.456			
97	I always add my old friends to my new online friends' group chat			0.429			

Item No.	Component	1	2	3	4	5	6
<b>Component 4: Academic and Interpersonal Skills</b>							
80	I find it difficult to complete assignments on time because no one is actively looking for my work				0.559		
81	I find it difficult to get used to the fact that I am responsible for my own learning				0.517		
78	I find it hard to do work on my own initiative				0.493		
79	I find it demotivating when there is no one to tell me to do my work				0.464		
82	I find it difficult to motivate myself to attend because no one is taking attendance				0.446		
32	I would not continue on the course if I had not made any friends in University/College				0.417		
122	I see my old friends having a great time online, and wish that I didn't have to go to University/College				0.414		
<b>Component 5: Losing Connections with Friends</b>							
115	It's hard to see my old friends because University/College is so busy					0.503	
119	I feel that I am missing out on the University/College social life because my life is so busy					0.457	
7	I find that I do not have any spare time since starting University/College					0.420	
154	I find that it's hard to get my point across in group chats					0.414	
113	I don't have time to see my old friends					0.409	
148	I feel it's hard to gauge reactions online					0.403	
142	I feel that I cannot have the same emotional connection with online friends through messaging or social media					0.400	



Item No.	Component	1	2	3	4	5	6
<b>Component 6: Social Interactions</b>							
34	My friends in University/College make it so much easier to get up in the morning						0.585
30	I enjoy my University/College experience because of my college friends						0.532
67	The friendships that I have in college have changed my life						0.510
33	I'm lucky to be on a course that I enjoy						0.484
68	I would not be happy coming to University/College without the friends that I have met here						0.476
169	I feel that the University/College social life is non-existent (R)						-0.422
	Cronbach's Alpha	0.907	0.839	0.789	0.803	0.67	0.613

Table 4.7

*Communalities*

Item No.	Item	Extraction
1	I was attracted to the course and University/College because of the social media and website content about the University/College	0.109
2	If it wasn't for my old friends, I don't think I would have applied to this course	0.134
3	I found it easy to make the decision to apply to this course	0.101
4	I opted to apply for a course that I knew I would get instead of challenging myself to do better	0.229
5	I chose this University/College because of it's size	0.112
6	I find that University/College is the first place where you have to start fending for yourself	0.141
7	I find that I do not have any spare time since starting University/College	0.252
8	The timetable of lectures is hard to get used to in University/College	0.193
9	I like that University/College is not as strict as school	0.085
10	The social life in University/College is not what I thought it would be	0.254
11	I find budgeting very difficult when at University/College	0.222
12	I have to make financial choices between living and socialising	0.203
13	I found it very stressful trying to find suitable accommodation	0.143
14	I feel left out because I don't have the money to socialise	0.299
15	I feel left out of the University/College social life because I live at home	0.201
16	I need to be organised at home so that I can attend University/College	0.170
17	I need to work so that I can attend University/College	0.106
18	Social media and/or instant messaging makes me feel included in the University/College environment	0.304
19	I think that the University/College connects with students by using online social media and instant messaging platforms	0.186
20	The University/College did not let us know about the online groups before induction	0.127
21	Social media and/or instant messaging instils a sense of community in the class	0.314
22	I felt excluded from the class group because I did not know about the course social media page in advance of starting	0.195

Item No.	Item	Extraction
23	I feel that it is easier to get a group discussion going in online group chats than face to face	0.217
24	I find it difficult to contribute to online group chats with University/College friends	0.207
25	I think that email is an ineffective form of communication	0.151
26	I find that Instant messaging is the easiest way to communicate with my classmates	0.202
27	I feel that social media and/or instant messaging serves as a communal point for the class as the years progress	0.227
28	I worry that I won't fit in with my classmates	0.485
29	If I had more University/College friends, I would love the course more	0.381
30	I enjoy my University/College experience because of my college friends	0.501
31	I would make more friends if the class size was smaller	0.156
32	I would not continue on the course if I had not made any friends in University/College	0.272
33	I'm lucky to be on a course that I enjoy	0.341
34	My friends in University/College make it so much easier to get up in the morning	0.501
35	I feel that the worst part of starting a new course, is going in and sitting on your own	0.286
36	I find it difficult to make friends on my course	0.589
37	I feel like I am the only one with no University/College friends	0.489
38	I have spoken to everyone on the course	0.299
39	I find that it's easy to be lonely in University/College	0.298
40	The class size made it easier to speak to people	0.292
41	I feel lonely in a large class	0.391
42	I feel lonely at University/College	0.576
43	I see the same people everyday in University/College	0.148
44	I feel that none of the people I have met in University/College like me	0.440
45	I have no one to talk to at University/College	0.524

Item No	Item	Extraction
46	I feel that my classmates don't know me	0.571
47	I don't know how to go up to my classmates and get to know them	0.561
48	I feel that I don't know my classmates	0.545
49	I find it hard to make new friends as an adult	0.534
50	I feel that I would not have gotten to know my classmates initially, if it wasn't for social media and/or instant messaging	0.317
52	I feel that I get to know my classmates better when I am friends with them on social media	0.343
53	I see my college friends a lot so I don't feel the need to talk to them online	0.243
54	I feel that I would miss out on a social life if I didn't have social media accounts	0.431
55	I find that online interaction makes face to face social interactions easier	0.419
56	My classmates are my friends on social media and/or instant messaging	0.416
57	When I met my new friends in University/College, we created an online group chat exclusive to our group	0.194
58	I feel excluded when I am not part of my classmates social online group chats	0.396
59	The online college group chat calms me down at times of assignments or exams	0.154
60	I find that there will always be someone to say "you can do this" in the online group chats	0.193
61	I feel that I should be anxious when I see in the online group chats that classmates are getting anxious about exams or assignments	0.317
62	I find that it's easy to complain about the course or institute in online group chats	0.225
63	I feel anxious if there is no reply to my online messages	0.365
64	I would not go into a lecture without my friends	0.290
65	I can see online that I am not the only one struggling with assignments	0.231
66	I prefer to hang out with my friends on campus than to go home after lectures	0.271
67	The friendships that I have in college have changed my life	0.441
68	I would not be happy coming to University/College without the friends that I have met here	0.406
69	Group work helped me meet new friends in my class	0.229

Item No.	Item	Extraction
70	I feel that it is necessary to create an online group chat to complete a group work assignment	0.240
71	I find that online group chats are really useful for group work in college	0.292
72	I feel that online group chats distract me from college work	0.127
73	I prefer to use group chats than face to face meetings when working on college assignments	0.215
74	I find that face to face conversations or phone calls regarding University/College work, take up too much of my time	0.162
75	Online group chats relieve the stress of group work	0.290
76	It takes longer to communicate about group work with classmates on group chats than face to face meetings	0.138
77	I don't see a bad side to using group chats for college work	0.111
78	I find it hard to do work on my own initiative	0.303
79	I find it demotivating when there is no one to tell me to do my work	0.312
80	I find it difficult to complete assignments on time because no one is actively looking for my work	0.355
81	I find it difficult to get used to the fact that I am responsible for my own learning	0.326
82	I find it difficult to motivate myself to attend because no one is taking attendance	0.316
83	I understand the work that I have to do	0.197
84	I feel like I moved from an environment where I got a lot of help, to an environment where I have to do everything for myself	0.178
86	I am really nervous that I will not be good at the assignments	0.352
87	I know that I will be successful on the course	0.199
88	I feel very nervous when I think about exams	0.186
89	I would feel out of touch with my old friends without social media and/or instant messaging	0.384
90	I feel that social media reinforces the fact that my old friends are making new friends without me	0.376
91	I use social media and instant messaging to stay in touch with old friends who moved away	0.345

Item No.	Item	Extraction
92	I use instant messaging and social media to keep track of what my old friends are doing	0.377
93	I would feel disconnected with my life outside of University/College, if I didn't have instant messaging or social media	0.451
94	I keep in touch with my old friends through social media and instant messaging more so than face to face	0.329
95	I feel included when I am part of my old friends' new online group chats	0.442
96	I want to be included in my old friend's group chats	0.386
97	I always add my old friends to my new online friends' group chat	0.293
98	I want to see what my old friends are doing without me	0.315
99	I find that my old friends are difficult to contact	0.293
100	I feel that I am missing out when I see my old friends' social media updates	0.476
101	I feel happy when I see my old friends tagged on social media posts with their new group of friends	0.193
102	From what I see on Social media and instant messaging, I feel that my old friends have a much better social life in University/College than I do	0.410
103	I feel left out when I realise that my old friends are making new friends in University/College	0.483
104	I feel that my old friends are envious of the friends I've made in University/College	0.376
105	I find that conversation gets boring when I only see my old friends on social media	0.244
106	I feel that I miss out on social events when I am not part of an online group chat	0.413
107	I feel that my friends are with me when I am chatting to them online	0.247
108	I find that it's more awkward to re-message an old friend than it is to message a new friend on social media	0.169
109	When I get frustrated in University/College, I vent to my old friends online	0.272
110	I want to meet my old friends, face to face, to just sit down and talk	0.302
111	I feel that my old friends' new groups are more important to them than I am	0.287
112	I miss my old friends if I don't see them	0.362
113	I don't have time to see my old friends	0.268
114	I don't see my old friends as often as I would like	0.339

Item No.	Item	Extraction
115	It's hard to see my old friends because University/College is so busy	0.395
116	I wish I chose the same career/academic path as my old friends	0.451
117	I feel that my old friends don't have time to see me	0.302
118	It upsets me when I see online that my old friends are meeting up without me	0.432
119	I feel that I am missing out on the University/College social life because my life is so busy	0.370
120	Online group chats keep me motivated to push myself further in my work	0.491
121	When I tell friends that I am studying or doing college work, it motivates me to complete it	0.290
122	I see my old friends having a great time online, and wish that I didn't have to go to University/College	0.440
123	I see what my friends/family are doing and that motivates me to continue	0.260
124	My old friends make me feel that I'm doing well at University/College	0.345
125	I see my friends progressing their studies and it motivates me to keep going with mine	0.278
126	I occasionally unfriend old friends on social media	0.096
127	Sometimes, I feel under pressure by my old friends to make announcements on social media	0.446
128	I only post to groups on social media sites as opposed to public posts	0.159
129	I think it's socially acceptable when friends refer to my social media posts in conversation	0.151
130	I find that that I have a shared interest with people who I have met online	0.331
131	I use social media and/or instant messaging to keep in touch with family members	0.204
132	I prefer to phone family members or speak to them face to face	0.100
133	I think it's intrusive when friends refer to my social media posts on other social media platforms	0.236
134	I like to see if my friends have seen my online message	0.351
135	I think it's rude when people do not reply to online messages	0.184
136	I frequently check my phone for messages	0.310
137	I like to respond to a message as soon as I see it	0.150

Item No.	Item	Extraction
138	I try to keep online messaging to a minimum	0.218
139	All organisation for meeting up happens online	0.209
143	My online only friends are mutual friends	0.098
144	I have online friends who I do not communicate with	0.093
146	I'm not as close with online only friends	0.077
148	I feel it's hard to gauge reactions online	0.193
149	I feel like I censor myself online	0.141
150	My online messages can be misinterpreted	0.183
151	I find that sarcasm is difficult to interpret online	0.164
152	I find that it's much easier to express emotion on the phone than on social media or instant messaging	0.186
153	I find that people are easily offended online	0.203
154	I find that it's hard to get my point across in group chats	0.253
155	I prefer using video chat so that I can see the person I am talking to	0.244
156	I prefer to use voice notes instead of instigating a discussion in online group chats	0.323
157	I feel awkward when people do not respond to my texts on group chat	0.334
158	Sometimes I feel uncomfortable with content on group chats with old friends	0.402
159	Sometimes I feel uncomfortable with content on group chats with University/College friends	0.426
160	It upsets me when an online negative incident carries over into face to face interaction	0.215
161	A negative online experience made me feel unwelcome in University/College	0.405
162	I feel powerless when there is a negative online experience	0.353



Item No.	Item	Extraction
163	On at least one occasion, negative behaviour by others prompted me to leave online groups on social media and/or group chats	0.213
164	I find that the lecturers are helpful when it comes to college work	0.126
165	It's easier to send an email to a lecturer than to talk to them	0.237
166	I feel that during the day, there is nothing keeping me here once lectures are finished	0.296
167	I sometimes go to my old friends' University/College and stay there for the rest of the day	0.281
168	I just go to lectures and then go home	0.262
169	I feel that the University/College social life is non-existent	0.297
170	I think that clubs and Societies are promoted well online	0.177
171	I think there is an over-reliance on digital communication from the University/College	0.098
140	I find it easier to have online only friends	0.420
141	I have online friends who I message but have never spoken to them face to face	0.253
145	I confide in my online only friends when I feel frustrated	0.271
142	I feel that I cannot have the same emotional connection with online friends through messaging or social media	0.171
147	I only add friends online after I've met them face to face	0.149
51	I prefer to chat face to face than via social media and instant messaging with my University/College friends	0.287

Table 4.8

*Component intercorrelations with means and standard deviations*

	Mean (SD)	(1)	(2)	(3)	(4)	(5)	(6)
(1) Online Social Cohesion	89.04 (23.91)	1					
(2) Social Difficulties	72.85 (14.53)	.25**	1				
(3) Online Social Exclusion	53.82 (10.45)	.26**	.26**	1			
(4) Interpersonal Skills	32.90 (8.60)	.37**	.23**	.39**	1		
(5) Losing Connections	24.02 (6.92)	.38**	.23**	.30**	.24**	1	
(6) Social Interactions	18.93 (5.82)	.28**	-.19**	.19**	.19**	.21**	1

Pearson's correlations. \*\*  $p < 0.01$ , two-tailed.

## 4.6 Discussion

This study extends the understanding of the role of social media use on student adjustment, by combining college adjustment and social media use into one scale. The result of this study is a six component model with 76 items.

### 4.6.1 Overall scale

The six component structure demonstrates face validity based on the subjective assessment of the relevancy of the items and components to measuring college adjustment and online friendships. The components relate to the results of the thematic analysis that were discussed in chapter three.

### 4.6.2 Six components

#### 4.6.2.1 Online social cohesion.

'Online social cohesion' explains the behaviour around using social media to gratify needs to maintain old friendships and establish new connections, when starting college, and is aligned to the overarching theme 'social cohesion' from chapter three (Katz et al., 1974; Rubin, 2002). The items in this component, highlight the importance of the use of social media and instant messaging to students who are starting college and in the process of

forming a new social identity as a college student (Iyer et al., 2009; Serpe, 1987; Stryker & Burke, 2000; Tajfel & Turner, 1979; Thomas et al., 2017). In relation to the college adjustment taxonomy (Baker & Stryk, 1989), there is merit in suggesting that 'online social cohesion' is related to the social aspect of college adjustment where students manage old and new friendships. The unique contribution of this study is that this component is specific to social media use and is not included in existing college adjustment scales.

'Online social cohesion' is positively correlated with the other five components. The positive relationship with 'social difficulties', suggests that as students become more engaged online then the more difficulty they may have with face to face interactions, especially with regard to meeting new people face to face. This supports findings from previous studies where students who are preoccupied with maintaining old friendships exhibit poorer adjustment to college (Credé & Niehorster, 2012; Manago et al., 2012; Mattannah et al., 2010; Pempek et al., 2009; Seo et al., 2016; Yang & Lee, 2018).

Similarly, an increased perception of 'online social cohesion' correlates with difficulties in 'academic and interpersonal skills' where self-motivation to complete new academic challenges increase. The current study echoes the findings of previous research that found social media use was negatively related to college engagement, academic performance, and academic adjustment, perhaps this could be due to the demand to manage multiple social identities across multiple online groups (Cao et al., 2018; DeAndrea et al., 2012; Iyer et al., 2009; Kalpidou et al., 2011; Junco, 2011; LaRose et al., 2011; Serpe, 1987; Thomas et al., 2017; Yeboah & Ewur, 2014). The results of this study suggest

that the more the student feels included online then the more difficulty they may experience with academic and interpersonal challenges.

#### **4.6.2.2 Social difficulties.**

‘Social difficulties’ is aligned to the overarching theme ‘peer group influences’ from chapter three. It contains 15 items and all are associated with feelings of negativity surrounding the difficulties of meeting new people and making friends. Whilst few of the items refer to online usage, this component is important because of the potential impact of the lack of social interactions on college adjustment. In relation to the college adjustment taxonomy (Baker & Siryk, 1989), there is merit in suggesting that this component is related to the social aspect of college adjustment where students develop their interpersonal skills to get to know classmates and establish a new social circle.

‘Social difficulties’ is positively correlated with five components but negatively correlated with ‘social interactions’ which suggests that the more social difficulties students experience then the less likely they are to socially interact with classmates and others in college. The positive relationship with ‘online social cohesion’ and ‘online social exclusion’ suggests an increase in social media use, possibly in an attempt to belong either to old friend groups or new college friend groups. Previous research suggests that social difficulties negatively relates to social and overall college adjustment (Ababu et al., 2018; Credé & Niehorster, 2012; Manago et al., 2012; Mattannah et al., 2010; Pempek et al., 2009; Seo et al., 2016; Yang & Lee, 2018).

The positive correlation with ‘online social exclusion’ suggests that students may feel pressured by peers to interact online, which supports findings from chapter three, where regardless of negative experiences encountered on

social media, students continue to use it when adjusting to college. Other literature in the area of online groups suggest that those who have difficulty with face to face interaction may prefer online (McKenna & Green, 2002). The current study supports and adds to this by suggesting that as social difficulties increase, so too do feelings of online exclusion and online cohesion. Similarly, the more social difficulties then the more difficult it becomes to manage self-motivation and academic work and the less time the student has to manage old friendships.

#### **4.6.2.3 Online social exclusion.**

‘Online social exclusion’ describes how online interactions, especially in group chats, can propagate feelings of social exclusion that may impact on face to face interactions. This supports findings from chapter three and aligns with the overarching theme ‘social exclusion’. In relation to the college adjustment taxonomy (Baker & Siryk, 1989), there is merit in suggesting that this component is related to the social aspect of college adjustment where students manage their emotions around friendships.

‘Online social exclusion’ is positively correlated with all five components which suggests that the higher the perception of feeling excluded through online interaction then:

- the more difficulties may be experienced with academic challenges
- the more difficulties in managing time to see old friends
- the higher the perception of losing connections with old friends
- the more social interactions with regard to making new friends both online and face to face

The results suggest that if students feel that the need to belong (Baumeister & Leary, 1995) is not met through using social media and instant messaging, then this may have a negative impact on college adjustment.

The positive relationship with 'losing connections with friends' suggests that being online could become a substitute for face to face interactions with old friends, which was not perceived positively by participants in chapter three. They felt that that friendships cannot develop online, they are simply maintained which supports findings from other studies (Ellison et al., 2007, 2011; Ellison et al., 2014; Gray et al., 2013). Furthermore, this component supports other research where it suggests that time and effort are required to maintain and develop online friendships (Garbutt, 2009; McEwan et al., 2013; McKenna & Green, 2002). A future area of study could consider measuring the feelings of inclusion and exclusion based on social media behaviour. It is feasible to suggest that online interaction using social media may introduce risks of social exclusion.

#### **4.6.2.4 Academic and interpersonal skills.**

'Academic and Interpersonal skills' describes difficulties that students face in motivating themselves to complete college work and adapting to independent learning. It aligns with the overarching theme 'academic and interpersonal skills' from chapter three. In relation to the college adjustment taxonomy (Baker & Siryk, 1989), there is merit in suggesting that this component is related to the academic aspect of college adjustment where students need to adapt to new ways of learning and self-motivation.

'Academic and interpersonal skills' is positively correlated with all five components which suggests that the difficulties experienced by students

regarding academic and interpersonal skills could be related to using social media, in attempting to maintain friendships but yet losing touch with old friends and difficulties in establishing new friendships in college (Paul & Brier, 2001).

Students use social media for a myriad of reasons as discussed in chapters two and three, to satisfy human needs such as the need to belong and social identity (Baumeister & Leary, 1995; Iyer et al., 2009; Serpe, 1987; Tajfel & Turner, 1979; Thomas et al., 2017). In turn, to gratify these needs, students may belong to multiple social media platforms and have multiple groups of friends within each platform (Katz et al., 1974; Yang & Lee, 2018). It could be suggested that the use of social media increases where motivation to complete academic challenges is low, possibly due to the time and effort spent establishing and maintaining online friendships (Ababu et al., 2018; McKenna & Green, 2002; Rubin, 2002; Whelan et al., 2020).

#### **4.6.2.5        Losing connections with friends.**

‘Losing connections with friends’ describes the lack of time spent with old friends, difficulties in maintaining old friendships and the etiquette surrounding the use of social media around maintaining old friendships. It aligns with the overarching theme ‘social media and instant messaging etiquette’ from chapter three.

‘Losing connections with friends’ is a new aspect to college adjustment that is not currently represented in the college adjustment taxonomy (Baker & Siryk, 1989). It is positively correlated with all five components of the new scale. This supports findings from chapter three where social media can increase the visibility of old friends drifting away. However, in efforts to minimise the threat of friendship loss (Baumeister & Leary, 1995), students may continue to remain

online with friends who have drifted away causing friendsickness (Paul & Brier, 2001). Similarly, the relationships with the online components of the new scale ('online social cohesion' and 'online social exclusion') suggest that feelings around being both included and excluded online increases as students lose connections with old friends. This echoes the findings in chapter three where students make an effort to stay in touch with old friends, however, social media may increase feelings of being socially excluded online. Therefore the use of social media in these cases does not gratify the need to stay in touch with old friends (Katz et al., 1974; Rubin, 2002). The results from the current study suggest that feelings of losing connections with old friends relates to social media use. Furthermore, it could be suggested that in an effort to keep friendships going, social media use increases, which in turn, may negatively impact college adjustment (Paul & Brier, 2001; Whelan et al., 2020).

#### **4.6.2.6 Social interactions.**

This component has six items and describes the impact of friendships on college and aligns with the overarching theme 'peer group influences' from chapter three. In relation to the college adjustment taxonomy (Baker & Siryk, 1989), there is merit in suggesting that this component is related to the social aspect of college adjustment where students manage old and new friendships.

'Social interactions' has significant relationships with all components of the scale. The positive relationship with 'online social cohesion' suggests that the more the students make friends in college then the more likely they are to feel included online. Furthermore, the negative relationship with 'social difficulties' suggest that the more they make friends then the less social difficulties they will experience (Baumeister & Leary, 1995; Bowman et al.,



2019; Freeman et al., 2007). Furthermore, it could be suggested that students' priorities shift to managing face to face and online friendships and therefore, time is invested into this rather than into the academic side of college adjustment where procrastination on Facebook is associated with higher levels of academic stress (Meier et al., 2016). The positive association with 'academic and interpersonal skills' suggests that successful social interactions in college could relate to an increase in developing academic and interpersonal skills (Martinez-Lopez et al., 2019; Wilson et al., 2015; Yazedjian & Toews, 2006; Zumbrunn et al., 2012).

#### **4.6.2.7 Overall.**

The intercorrelations between the components suggest that the more online socially included a student feels then the more face to face difficulties they may experience. Subsequently, the more difficulties they may have with managing academic and interpersonal skills such as independent learning, motivation challenges and managing old friendships. Similar to findings in previous literature, it could be suggested that an increased perception of online inclusion can have a negative effect on overall college adjustment (LaRose et al., 2011; Madge et al., 2009; Manago et al., 2012; Raacke & Bonds-Raacke, 2015; Yang & Brown, 2015; Yang & Lee, 2018).

#### **4.6.3 Limitations and future research**

The pilot scale was too long at 171 items and to reduce the dimensions of the scale, a PCA was conducted and resulted in a 76 item scale, with six components. The number of items from the original scale was reduced by 55%. The size and complexity of a psychometric scale or model can have negative effects on data collection and analysis, research suggests that long

questionnaires can cause participant acquiescence (i.e. the tendency to agree) and fatigue (Krosnick & Presser, 2009), both of which could result in incomplete data entry and case outliers.

#### **4.6.4 Conclusion**

By combining social media and college adjustment issues into a single scale, the current thesis is progressing towards validating a new instrument that will assess the role of social media on college adjustment. The social media aspect of college adjustment is concerned with how students feel (excluded or included) as a result of the use of social media. In some instances, social and academic needs were satisfied through using social media and instant messaging (Chen, 2011; Grellhesl & Punyanunt-Carter, 2012; Wang et al., 2012; Yang & Brown, 2013), but it also created further needs that resulted in negative feelings surrounding social exclusion (Katz et al., 1974; Rubin, 2002; Yang & Brown, 2013).

In developing the new scale, due to the variation of students' use of social media platforms and multiple social media accounts (Statista, 2020; Yang & Brown, 2016; Yang & Lee, 2018), the new scale is not specific to a single social media platform but instead refers to general terms such as social media and instant messaging.

The student adjustment scale demonstrates good subjective face validity based on the components that were retained and their relation to the themes identified in chapter three. The intercorrelations of the six components suggest good internal convergent validity and that social media use may have a negative impact on college adjustment, which warrants further investigation.

The next study will involve data collection using the student adjustment scale to conduct a confirmatory factor analysis (CFA). The results of the CFA will determine if the scale should be reviewed and further reduced. In addition, intercorrelation analysis will be examined along with convergent validity testing using an existing college adjustment scale such as the college adjustment test (CAT; Pennebaker et al., 1990).

## **Chapter 5: Validation of the Student Adjustment Scale**

The purpose of the student adjustment scale, is to measure current issues in college adjustment that includes the use of social media, for undergraduate students. In chapter four, a principal components analysis (PCA) was used to reduce the dimensions of the pilot scale from 171 items to a six component, 76 item scale.

The aim of this study is to validate the six component model by conducting a confirmatory factor analysis (CFA). As previously reviewed in chapter two, college adjustment scales will be briefly discussed on the basis of validation of the scales, any anomalies in reliability or construct validity will be highlighted. Secondly, social media scales will be reviewed under the same criteria. A CFA will be conducted on the new scale and finally, a comparison of the new scale to the College Adjustment Test (CAT; Pennebaker et al., 1990) will be used to establish convergent validity.

### **5.1 Background**

College adjustment and social media scale development validation literature will be recapped from chapter two, with a view of implementing best practice for the new scale validation with respect to reliability, structural validity, and other validity tests (Rust & Golombok, 2009; Sigerson & Cheng, 2018).

#### **5.1.1 *College adjustment issues***

Findings from chapter three suggest that psychological constructs such as the need to belong (Baumeister & Leary, 1995), and social identity theory (Serpe, 1987; Stryker & Burke, 2000; Tajfel & Turner, 1979) are an important part of college adjustment for the present-day student and that using social media or instant messaging may satisfy those human needs (Chen, 2011; Katz

et al., 1974; Rubin, 2002). The need to belong can influence behaviour in relation to college adjustment where students may find that satisfying this need can result in social and academic adjustment to college (Bowman et al., 2019; Freeman et al., 2007; Hurtado et al., 1996; Lewis et al., 2017; Pittman & Richmond, 2008; Wilson et al., 2015; Zumbrunn et al., 2012). However some research suggests that social media only gratifies a social need in maintaining friendships (Yang & Brown, 2013). Therefore, students are increasingly using social media as a means to maintain friendships to establish new social identities (Rubin, 2002; Serpe, 1987; Tajfel & Turner, 1979). Social media affords students the ability to bridge and bond with groups online which may result in multiple social identities being formed within these groups (Ellison et al., 2007; Iyer et al., 2009; Thomas et al., 2017; Williams, 2006). In addition, social media allows opportunities to interact simultaneously with a limitless number of friends online, however there is a psychological limitation on simultaneous interactions that technology cannot overcome (Dunbar, 2018). Therefore, there may be a possibility of cognitive overload when it comes to social media use which may affect academic adjustment (Cao et al., 2018; Whelan et al., 2020). These new issues will be considered in the analysis of the student adjustment scale.

### **5.1.2 College adjustment and social media scales**

As discussed in chapter four, for the most part in college adjustment scale development literature, results of a PCA or an EFA are reported along with reliability statistics but overall research seems to be lacking with regard to confirming scale factors (see Table 5.1). In the social media scale development literature, in addition to construct and validity issues, none of the social media

scales are specific to college adjustment. In some cases, results were misinterpreted as an adequate model fit (Lee et al., 2016; Li et al., 2016) and minimally adequate fits were presented as adequate without caution to interpretation (Ali et al., 2020; Jenkins-Guarnieri et al., 2013; Liu & Ma, 2018) (see Table 5.2).

Table 5.1

*Summary of college adjustment scales*

Scale	Authors	Year	Test-retest	CFA	Model Fit Statistics	Type of validity and summary of results
College Adaptation Questionnaire (CAQ)	Crombag	1968	X	X	X	Criterion: adaptation strongly related to depressive affect, life satisfaction and loneliness
Student Involvement Questionnaire (SIQ)	Pascarella & Terenzini	1980	X	X	X	Convergent: intercorrelations among 5 scales ranged from $r = .01$ to $r = .33$ & median correlation of $r = .23$ . Discriminant: each of the 5 scale significantly differentiated freshman persisters from voluntary drop outs
College Student Experiences Questionnaire (CSEQ)	Pace	1984 & 1990	X	X	X	Criterion: Quality of effort scales are the best predictors of students' progress toward personal/social development objectives
Student Adaptation to College Questionnaire (SACQ)	Baker & Siryk	1984 & 1986	X	X	X	In Baker's (2002) summary of how the SACQ is used in research, significant correlations with multiple scales are reported for convergent validity: CIAA (Borow, 1949) and the CLT (Brower, 1994) and MMPI (Kleinmuntz et al. (1960, 1961). Predictive validity correlated with attrition
College Life Task Assessment Instrument (CLTA)	Brower	1994	X	X	X	Convergent: 7 of the 9 subscales significantly (independently) predicted the SACQ total score. Incremental: predicts more of the variance than the SACQ (first year GPA: .65 vs .14; cumulative GPA: .55 vs .14; first year credits: .11 vs .04; cumulative credits: .12 vs .07)

Scale	Authors	Year	Test-retest	CFA	Model Fit Statistics	Type of validity and summary of results
College Adjustment Test (CAT)	Pennebaker et al.	1990	$r=.65$	X	X	The CAT is used to validate other scales: the Adjustment Problem Scale (Kazmi & Muazzam, 2017) convergent validity was significant ( $r = .46, p < .01$ ); the Social Provision Scale (Oluwatomiwo, 2015) where convergent validity was significant ( $r = .15, df = 298, p < .05$ ). Parenting styles, neuroticism, parental and peer attachment were significant predictors of the CAT (Brower, 1994; Datu, 2012; Gan et al., 2018)
The College Adjustment Questionnaire	O'Donnell et al.	2018	X	CFA	Items were removed post-hoc to improve model fit: RMSEA = .07; CFI = .94; TLI = .93	Convergent validity with the SACQ: Academic/educational: $r = .65$ ; social /relational $r = .67$ ; emotional/psychological $r = .69$
Inventory of New College Student Adjustment (INCA)	Watson & Lenz	2018	X	CFA	Supportive Network: $\chi^2(8) = 14.03; p = .08$ ; CMIN/DF = 1.27; RMR = .01; GFI = .98; CFI = .99; RMSEA = .06 Belief in Self: $\chi^2(18) = 27.47; p = .07$ ; CMIN/DF = 1.52; RMR = .02, GFI = .97, CFI = .97, RMSEA = .05 (Watson & Lenz, 2018, p. 9-10).	Correlation analysis between Supportive Network & MSPSS, $r = .62, p < .01$ ; Belief in Self & ASCS $r = .48, p < .01$ (Watson & Lenz, 2018, p. 9-10)

<sup>a</sup> "X" = not documented in research



Table 5.2

*Summary of social media scales*

Scale	Authors	Year	Test-retest	CFA	Model Fit Statistics	Type of validity and summary of results
Internet Social Capital Scale	Williams	2006	X	CFA	Online: NNFI = .85 ; GFI = .88 ; PR = .89 ; RMSEA = .08. ; Offline: NNFI=.85 ; GFI = .90 ; PR = .89; RMSEA = .08 (Williams, 2006, p. 605)	Online bridging: Convergent validity with measures of outward thinking and behaviours. Offline bridging: convergent validity with Needham/Putnam (2000) questions and Home.net studies (Kraut et al., 1996; 2002)
Facebook Intensity Scale	Ellison et al.	2007	X	X	X	Criterion: Significant positive relationships with social bridging and bonding (Williams, 2006)
The Facebook Questionnaire	Ross et al.	2009	X	X	X	No further evidence of validity testing
The Facebook Intrusion Questionnaire	Elphinston & Noller	2011	X	X	X	Using the short-form multidimensional jealousy scale (Elphinston et al., 2011), correlated with cognitive jealousy ( $r = 0.18$ ) and surveillance behaviours ( $r = 0.35$ )
The Social Media Use Integration Scale	Jenkins-Guarnieri, et al.	2013	0.8	CFA	RMSEA = 0.075; CFI=0.96; TLI = .95	Convergent: both scales showed significant correlations with the FBI Scale ( $r = .697$ and $r = .75$ ), overall scale with FBI ( $r = .77$ ), but the items in the SMUIS are based on the FBI. Internal validity was obtained in the post-hoc removal of 3 items

Scale	Authors	Year	Test-retest	FA	Model Fit Statistics	Type of validity and summary of results
The Media and Technology Usage and Attitudes Scale	Rosen et al.	2013	X	CFA	Ozgur (2016) found that the model fit the data: RMSEA = .043; CFI = .95; TLI = .93	Subscales correlated with age, ethnicity and education. Anxiety in relation to being without technology and dependence on technology was significant ( $t(292) = 3.83, p < .001$ )
The social media motivations scale	Orchard et al.	2014	X	X	X	Criterion validity: all motivations for Facebook use were predicted. No further studies to validate the scale
The Facebook Relationship Maintenance Behaviours Scale	Ellison et al.	2014	X	CFA	RMSEA = 0.05; CFI = 1.00; TLI = .99	No record of convergent or discriminant validity
The Impact of Student's Social Network Use Scale	Topaloglu et al.	2016	X	X	X	Internal convergent validity: significant relationships between all the factors
Social Networking Time Usage Scale (SONTUS)	Olufadi	2016	X	CFA	RMSEA = 0.04; CFI = .95; TLI = .94	Convergent: subscales are associated with the Internet Addiction Test (Young, 1999) & the Facebook addiction scale; Predictive validity: significant relationship with personality
The Psycho-Social Aspects of Facebook Use (PSAFU)	Bodroža & Jovanović	2016	X	CFA	RMSEA = 0.40 for 26 item scale, not reported for the 43 item "long" scale	Convergent: correlation with social anxiety
The Social Media Disorder Scale	Van den Eijnden et al.	2016	X	CFA	Samples: 1) RMSEA = 0.000; CFI = 1.000; 2) RMSEA = .041; CFI = .997; 3) RMSEA = .041; CFI = .989	Convergent validity: strong correlations between SMD and CIUS, self-declared social media

Scale	Authors	Year	Test-retest	FA	Model Fit Statistics	Type of validity and summary of results
The Social Networking Fatigue Scale	Lee et al.	2016	X	SEM	RMSEA was not reported. AVE & CR values, all above .6	Convergent: acceptable between the subscales. Discriminant: established through the squared root of AVE
The Social Media Addiction Scale (Chinese)	Liu & Ma	2018	X	CFA	RMSEA=0.042; CFI=.929; TLI=.935	Convergent & discriminant validity: subscales were significantly correlated to self-esteem, narcissism, smartphone addiction and adolescents pathological internet use
The Friendship Quality on Social Network Sites Questionnaire	Verswijvel, et al.	2018	X	Multiple CFA's across 2 age groups (12-15 yrs & 16-19 yrs)	model fit for 5 factor model RMSEA = 0.07; CFI = 0.98; TLI = 0.97	Convergent: subscales were highly correlated with each other
The Social Networking Sites Usage and Needs Scale (SNSUN)	Ali et al.	2020	X	SEM	RMSEA = 0.078; CFI = 0.861	Convergent & discriminant validity: subscales were correlated and the model satisfied the discriminant validity criterion by testing the square root of AVE

*Note.* The table was adapted from Sigerson and Cheng (2018).

<sup>a</sup> "X" = not documented in research.

## 5.2 Current study

The aims of this study are thus to examine the six component model of the student adjustment scale for construct and convergent validity. It will do so by having participants complete both the student adjustment scale and the 19 item College Adjustment Test (CAT; Pennebaker et al., 1990) and by conducting a confirmatory factor analysis (CFA) on the student adjustment scale. Results will be discussed in light of literature in the area, future directions of research and how this work offers a unique contribution to knowledge.

## 5.3 Method

### 5.3.1 Participants

Recruitment of 507 participants took place from October 2019 to January 2020 in the UK and Ireland, of these, 210 were removed due to incomplete data ( $n = 297$ ). The final sample includes 110 males (37%), 175 females (59%), three transgender males (1%), five gender variant non-conforming (1.6%), two not listed (.67%) and two undisclosed (.67%). The age of participants ranged from 17 to 65 years ( $M = 20.66$ ,  $SD = 5.690$ ) and consisted of 270 students (91%) from an Irish institute and 27 from a UK university (9%). Of the 297 participants, 225 were in first year (76%), 59 in second year (20%), three in third year (1%) and 10 in fourth year (3%).

Of the 297 students, 94 (32%) attended psychology courses, 66 (22%) attended business courses, 100 (34%) attended courses linked to film, art and creative technologies, 35 (12%) attended English courses and the remaining two (1%) were unspecified.

In total, 25 (8.4%) students were mature students and 272 (91.6%) were not where the definition of mature student is 23 years of age or over (Citizens

Information, 2019). Nationalities of the participants varied with Irish being the most prevalent at 237 participants (80%), followed by British at 18 (6%), English at 6 (2%) and the remaining 36 (12%) consisted of American, Argentinian, Australian, Brazilian, Cameroonian, Filipino, French, Greek, Israeli, Italian, Latvian, Lithuanian, Polish, Romanian, Russian, Scottish, Spanish, Swedish, Thai, and other non-specified. Given that they were all studying at either an Irish institute or a UK university, it was assumed that their level of English comprehension was sufficient for completion of this study. Two hundred and nine (70%) participants stated that they lived with parents/caretaker, 32 (11%) lived in private accommodation, 21 (7%) lived in their own home, seven (2%) lived in university halls/accommodation, 13 (4%) lived with other family members and the remainder was unspecified (5%). Of the 297 participants, 155 (52%) attended college/university straight after school, 142 (49%) did not attend straight from school.

### **5.3.2 Design**

This study used a confirmatory factor analysis (CFA) to test the six component model. The 76 scale items were loaded as factors. The dependent variables used to measure the correlations between the student adjustment scale and the CAT are the overall college adjustment score of the CAT, and the three factors of the CAT: Positive affect, negative affect and homesickness (Pennebaker et al., 1990).

### **5.3.3 Materials**

#### **5.3.3.1 The student adjustment scale.**

The student adjustment scale was developed in chapter four resulting in a 76 item scale with six components: online social cohesion; social difficulties;

online social exclusion; interpersonal skills; losing connections with friends; and social interactions (see Appendix J). The item sequence in the new scale for the purpose of this study was different to chapter four. The items were distributed according to the rationale of Goldberg (n.d.) in that they were alternated according to factor, which supposedly serves the purpose of encouraging participants to pay attention to the items and helps increase valid responses. If the questions are perceived as similar then the participants may consider that the items are measuring the same construct and may give the same responses to all items. As the new scale is quite long, steps were taken to ensure that this risk was minimised and factor items were alternated.

The student adjustment scale is a 7-point Likert scale: 1 = 'strongly agree' to 7 = 'strongly disagree'. The reliability of the subscales and the overall scale in the current study with 297 cases are: 'Online social cohesion': Cronbach's  $\alpha = .892$ ; 'Social difficulties': Cronbach's  $\alpha = .884$ ; 'Online social exclusion': Cronbach's  $\alpha = .671$ ; 'Academic and Interpersonal skills': Cronbach's  $\alpha = .795$ ; 'Losing connections with friends': Cronbach's  $\alpha = .689$  and 'Social interactions': Cronbach's  $\alpha = .781$ . The overall reliability of the scale was Cronbach's  $\alpha = .902$ . According to Pallant (2013), Cronbach's  $\alpha > .70$  are acceptable, therefore the sub scales of 'online social exclusion' and 'losing connections with friends' should be interpreted with caution.

#### **5.3.4.2 College adjustment test (CAT).**

The College Adjustment Test (CAT; Pennebaker et al., 1990) was designed to measure coping and loss in the transition to college for undergraduate full time students. The development of the scale is underpinned by literature on coping and loss specifically for students who move out of home

to attend college and if students coping abilities could be facilitated by writing about coming to college or superficial topics. There is no record of construct validation for this scale. The CAT has three factors: positive affect, negative affect and homesickness, with good overall internal reliability, a Cronbach's alpha score of .79 and a strong test-retest reliability after two month intervals, where Pearson's  $r = .65$ . Criterion, convergent and discriminant validity is not recorded. However, the CAT is used to validate other scales such as the Adjustment Problem Scale (Kazmi & Muazzam, 2017) where convergent validity is significant ( $r = .46, p < .01$ ) and the Social Provision Scale (Oluwatomiwo, 2015) where convergent validity is also significant but correlation is weak ( $r = .15, df = 298, p < .05$ ). Other research used the CAT to measure overall college adjustment and found that parenting styles, neuroticism, parental and peer attachment are significant predictors of college adjustment (Brower, 1994; Datu, 2012; Gan et al., 2018). The CAT is deemed suitable for this study as a comparison to the new scale, because a college adjustment scale that contains items on social adjustment and interpersonal skills is considered similar to the six factors of the new scale: online social cohesion, social difficulties, online social exclusion, interpersonal skills, losing connections with friends and social interactions.

The CAT (Pennebaker et al., 1990) is a 19 item scale with three factors, in the current study where  $n = 297$ , the reliability of the factors is as follows: positive affect: Cronbach's  $\alpha = .665$ ; negative affect: Cronbach's  $\alpha = .871$ ; homesickness: Cronbach's  $\alpha = .663$ . The overall Cronbach's alpha value for the scale was .822. It is a 7-point Likert scale where 1 = 'not at all' to 7 = 'a great deal'. The items of the CAT correspond to the social and interpersonal

overarching themes of the student adjustment scale and is considered suitable to examine convergent validity with the new scale. See Appendix K for the CAT scale and scoring keys.

#### **5.3.4 Procedure**

Ethical approval was granted in the Irish institute and the UK university (Appendix L). In the UK university, ethical guidelines published by the British Psychological Society (The British Psychological Society, 2018) regarding setting forced responses on questions was changed between execution of studies two (chapter four) and three (chapter five). The data collection period ran over the originally planned timeframe. The stated date to allow participants to request removal of their data changed but is not reflected in the ethics documentation. The researcher was present at all data collection sessions and the participants were verbally informed of a new date during the sessions.

The questionnaire was available online only, paper copies of the questionnaire were not used. Participants were required to give their consent before progressing with the study, in addition all participants were required to be at least 18 years old. All questions except for consent and age did not necessitate a forced response.

The study information was available once the participant clicked on the study link. There were seven consent items that had to be selected before the participant could proceed. If the participant chose not to select all seven, then the questionnaire ended and they were brought to a 'thank you' page. There was logic in the questionnaire to ensure full consent. Participation in the study was optional. Both information and consent forms were provided to participants as part of the online questionnaire, these included information on withdrawing



their data from the study, confidentiality and anonymity. After completing the questionnaire, participants were provided with online debriefing information and contact details for the researcher should they have any questions.

The online questionnaire was created using Qualtrics. Active recruitment took place in an Irish institute and a UK university. The questionnaire was long and students did not independently complete it online, therefore permission to collect data in-class was sought through the relevant heads of department, course co-ordinators and individual lecturers. The participants used either laboratory computers or their own mobile devices to complete the questionnaire. In the UK university, the questionnaire was advertised online to students studying psychology on the participant pool system. The researcher stayed for the duration of data collection to address any questions. Students in the UK university were awarded two course credits for attending the data collection session. The average completion time for the questionnaire was 26 minutes.

### **5.3.5 Analysis**

This study was designed to validate the student adjustment scale by conducting a CFA in Amos version 26. It is envisaged that if the model does not fit the data pattern established in chapter four, then an EFA in SPSS version 26 will be carried out on the dataset to further optimise the scale. Furthermore, correlation analysis will be conducted to establish convergent validity with the CAT (Pennebaker et al., 1990).

## **5.4 Results**

### **5.4.1 CFA data suitability**

According to Byrne (2016), before undertaking a CFA, it is critically important to acknowledge the underlying assumptions of CFA and to assess the suitability of the data.

#### **5.4.1.1 Missing data.**

One of the underlying assumptions of a CFA is that the dataset is complete with no missing data. In total, there were 210 cases of incomplete data. On analysis of this data, simply observing the number of missing items per variable, the mechanism seemed to be missing completely at random (MCAR). According to Pituch and Stevens (2016), data removal should not be more than 5% to 10% of the complete dataset, if this is the case, then it is recommended to retain the cases with missing data and find an alternative estimation method. In this study, 41% of the cases were incomplete. In Amos, it is possible to analyse a dataset with missing data on the condition that the data is multivariate normal. However, given restrictions within Amos, it is not possible to run a bootstrap to handle nonnormality with missing data. In addition, the model fit indices cannot be calculated in the case of missing data. Considering Amos restrictions and that the data distribution is multivariate nonnormal, 210 cases were removed from the dataset which means that 297 cases were retained for analysis.

#### **5.4.1.2 Univariate and multivariate normality.**

According to Byrne (2016), another critically important assumption for a CFA is that the data is multivariate normal. Univariate normality tests of the mean of the overall score (dependent variable) of the student adjustment scale

were carried out and showed that there was no occurrence of extreme kurtosis or skewness. A Kolmogorov-Smirnov test indicated that the mean of the overall score was normally distributed:  $D = .029$ ,  $df = 297$ ,  $p = .20$ . The Shapiro-Wilk test also showed normal distribution where  $W = .997$ ,  $df = 297$  and  $p = .83$ . Further investigation involved reviewing the histogram which was slightly skewed. Skewed data can be problematic in a CFA (Byrne, 2016) so it was necessary to explore the data more closely. Given the unequal group sizes of the UK university ( $n = 27$ ) and the Irish institute ( $n = 270$ ), it was explored whether this could be contributing to the skewed data. This is not an uncommon practice whereby power is heavily dependent on sample size. In the current study, the UK university group is one tenth of the size of the Irish institute. According to Pituch and Stevens (2016), when a study has a small group size within a larger sample size, it is important to note that power can change dramatically as sample sizes decrease or increase and poor power may result in a Type II error where an incorrect model is accepted when it is false. Moreover, previous research into college adjustment scale development tends to focus on one college or university (Baker & Siryk, 1986; Pennebaker et al., 1990), it was therefore considered feasible for this study to consider discarding the smaller group, if necessary.

The mean of the overall scale score was tested for the two groups, the Irish institute group ( $n = 270$ ) where  $M = 3.73$  and  $SD = .54$  and the UK university group ( $n = 27$ ) where  $M = 4.20$  and  $SD = .50$  were compared using an independent samples  $t$  test,  $t(295) = -4.32$ ,  $p < .001$ . According to Cohen (1988), the magnitude of differences in the means (means difference =  $-.47$ , 95% CI:  $-.68$  to  $-.25$ ) was moderate (eta squared =  $0.06$ ). Thus, there was a

statistically significant difference between the two groups of students where almost 6% of the variance in the overall new scale is explained by the Irish institution. The assumption of homogeneity of variances was tested and satisfied via a Levene's test,  $F(297) = .40$ ,  $p = .53$ . The Irish institute group is associated with a lower overall scale score than the UK university group. Considering the means differences in groups and the slight skewness of the data, a further exploration into normality tests for each group was justified.

The Kolmogorov-Smirnov test for normality suggested that that data for the Irish institute group ( $n = 270$ ) was not significant for skewness or kurtosis:  $D = .03$ ,  $df = 270$  and  $p = .20$ . Similarly, the Shapiro-Wilk test for normality was not significant:  $W = .996$ ,  $df = 270$  and  $p = .70$ . Therefore, the assumption of normality was not violated. The histogram showed slight skewness but an exploration of the boxplot showed that the distribution was even with no outliers.

The Kolmogorov-Smirnov test for normality suggested that the data for the UK university group ( $n = 27$ ) was not significant for skewness or kurtosis:  $D = 1.04$ ,  $df = 27$ , and  $p = .20$ . Similarly, the Shapiro-Wilk test for normality was not significant:  $W = .98$ ,  $df = 27$  and  $p = .81$ , however the histogram and boxplot suggested skewed data. Therefore, considering the skewness of the overall dataset, the differences in group sizes, the moderate mean differences between the groups and the risk of incurring a Type II error, the UK university data was removed from the dataset for the CFA. The removal of this data resulted in 270 cases for CFA analysis with no test of normality outliers using the univariate normality tests. Further investigation of the dataset is necessary to detect multivariate outliers, and to consider the removal of such.

#### **5.4.1.3 Outliers.**

In SPSS, further preliminary analysis was conducted to detect multivariate outliers. This was explored through Mahalanobis Distance using Tabachnik and Fidell's (2014) guidelines where the critical value of 22.46 must not be exceeded. Linear regression showed that the maximum Mahalanobis distance was 28.65 which indicated the presence of multivariate outliers. Two cases were identified with Mahalanobis Distance of 23.14 and 28.65 respectively, and these were removed from the analysis ( $n = 268$ ). Once the two cases were removed, the Probability Plot of Regression did not indicate any major deviations from normality. The scatterplot did not indicate any cases outside of the recommended range of 3.3 to -3.3. Therefore, assumptions of normality and linearity were not violated.

#### **5.4.1.4 Multicollinearity and singularity.**

Standard multiple regression was used to ensure no violation of the assumption of multicollinearity and singularity (see Table 5.3). Five of the six independent variables correlate  $> .3$  with the mean of the overall new scale. 'Social Interactions' does not correlate adequately ( $< 0.3$ ) which could be problematic if this model fits the data. Correlations between the independent variables did not exceed 0.7.

Table 5.3

*Descriptive statistics and intercorrelations for the overall new scale score and 6 components*

No.	Factor	Mean (SD)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1)	Overall	283.1 (41.0)	1						
(2)	Online Social Cohesion	85.9 (20.4)	.82**	1					
(3)	Social Difficulties	69.8 (16.6)	.58**	.18**	1				
(4)	Online Social Exclusion	56.8 (8.3)	.64**	.31**	.42**	1			
(5)	Academic and Interpersonal Skills	30.6 (8.2)	.66**	.43**	.27**	.43**	1		
(6)	Losing Connections	19.2 (5.6)	.50**	.34**	.13*	.21**	.27**	1	
(7)	Social Interactions	17.3 (6.5)	0.1	.26**	-.51**	-0.1	0	.18**	1

Pearson correlation. \*  $p < 0.05$ , two-tailed. \*\*  $p < 0.01$ , two-tailed.

A further investigation into multicollinearity (see Table 5.4 below)

revealed that the coefficient tolerance value exceeded .10 for each factor.

Therefore, multiple correlations with the other independent variables were not high. In addition, VIF values were less than 10 for all independent variables.

Therefore, the multicollinearity and singularity assumptions were not violated (Pallant, 2013).

Table 5.4

*Collinearity statistics for each of the six components*

Factor	Collinearity Statistics	
	Tolerance	VIF
Online Social Cohesion	0.66	1.51
Social Difficulties	0.54	1.85
Online Social Exclusion	0.70	1.44
Academic and Interpersonal Skills	0.71	1.42
Losing Connections	0.84	1.20
Social Interactions	0.59	1.71

#### **5.4.2 Preliminary CFA analysis**

After the preliminary analysis and cleaning of data, 268 cases remained in the Irish institute group. The data was univariate normal where all skew values were less than three and all kurtosis values were less than seven (Byrne, 2016). Considering only the kurtosis values, the values ranged from 5.33 to -1.33, therefore there was no evidence of extreme skewness or kurtosis in the univariate assessment of normality. Mardia's (1970, 1974) normalised estimate of multivariate kurtosis is the C.R. value of the index of multivariate kurtosis. According to Byrne (2016), normalised estimates  $> 5.00$  are indicative of data that are not normally distributed. In this study, the Z-statistic was 30.51 which was highly suggestive of multivariate nonnormality in the sample. This warranted further investigation into outliers. The results from a linear regression in SPSS suggested that no cases exceeded the 22.36 cut off as recommended by Tabachnik and Fidell (2014). Therefore, no further cases were removed from the dataset.

Multivariate nonnormality can be due to the sample of multiple populations in one dataset (Tabachnik & Fidell, 2014). In this study, college adjustment is tested using data from students across different courses and different years of study because college adjustment is not experienced by a single cohort of students (Baker & Siryk, 1986). Considering that data was from multiple populations, this may have contributed towards the issue of multivariate nonnormality.

#### **5.4.3 Testing the 6-factor model**

The choice of estimation method is dependent upon the sample size, the complexity of the model and independence assumptions (Byrne, 2016):

Weighted Least Squares (WLS) estimation which requires very large sample sizes of between 2,500 and 5,000; GLS estimators works well with sample sizes greater than 2,500 but can lead to the acceptance of too many models (Tabachnik & Fidell, 2014); ADF (asymptotic distribution-free) works well with large sample sizes. For this study, the model is complex with six components and 76 observed variables, it is multivariate nonnormal and used a 7-point Likert type scale and the sample size was too small ( $n = 268$ ). Therefore WLS, GLS and ADF were not suitable estimation methods (Pituch & Stevens, 2016; Tabachnik & Fidell, 2014). There are alternative estimations that do not require normal distribution of data such as the Satorra-Bentler chi-square (1988, 1994) which seems to be the most robust and straightforward estimation for multivariate nonnormal data. Unfortunately, Amos does not offer this particular estimation method. The estimation methods deemed suitable for this analysis was the Maximum Likelihood (ML) estimation with ML bootstrapping and Bollen-Stine bootstrap where there is no assumption of normality and is distribution-free.

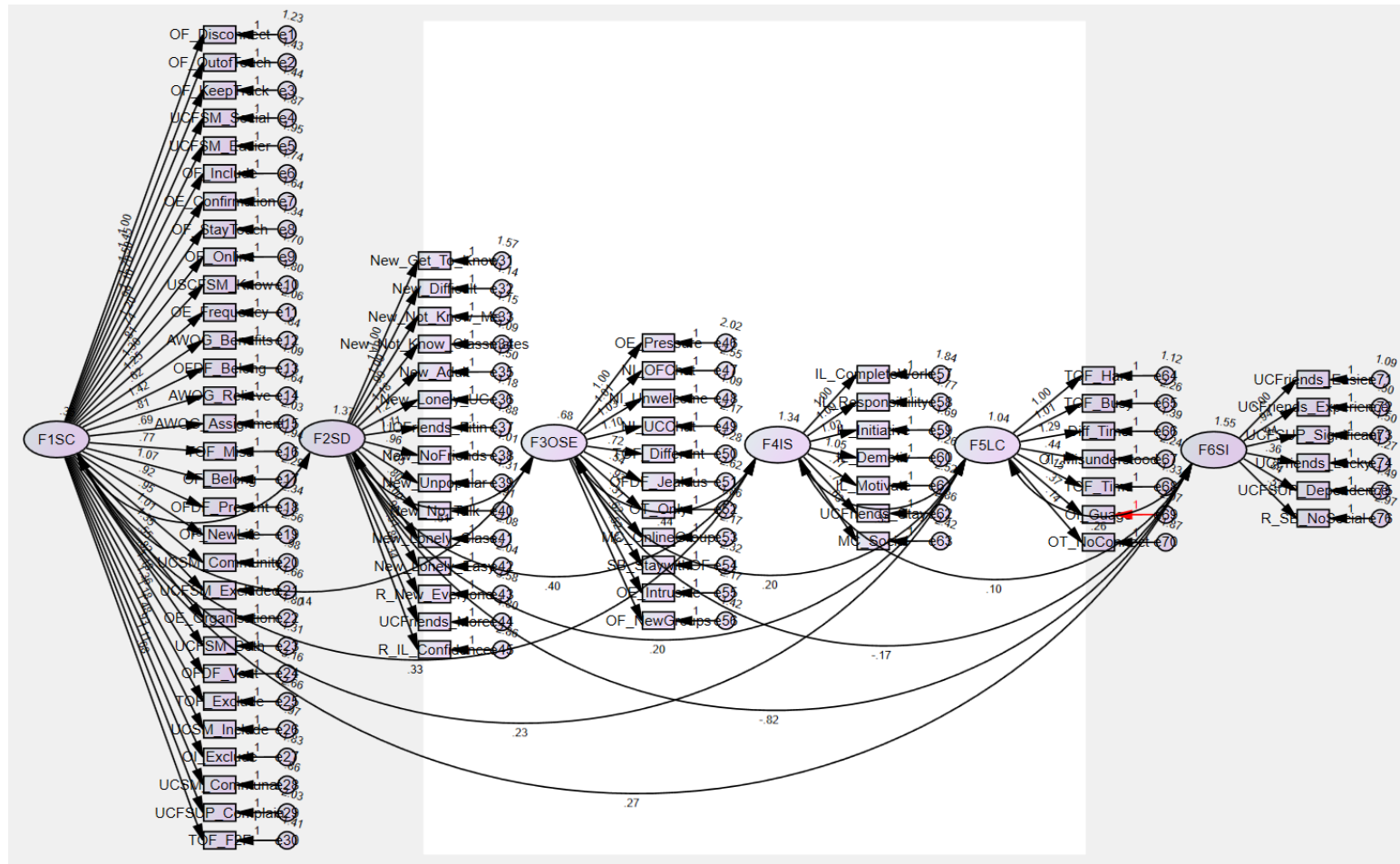
The model fit for the dataset where  $n = 268$ ,  $\chi^2 = 5610.486$ ,  $df = 2759$ ,  $p < 0.01$  indicates that the six component model with 76 items does not fit the data (see Figure 5.1). In this case, the value of  $\chi^2$  is inflated due to sensitivity possibly because the data is multivariate nonnormal and the model is complex with 76 observed variables and six latent variables. Due to multivariate nonnormal data, the Bollen-Stine bootstrap was used and a recalculation of the  $p$  value was .005 which was an improvement on the original  $p$  value, but the model still did not fit the data. The model fit statistics used in this study are the statistics referred to in social media scale development literature (Sigerson &



Cheng, 2018): Standardised Root Mean Square Residual (SRMR) is the standardised square root of the difference between the sample covariance matrix (i.e. the observed correlation) and the model covariance matrix (i.e. the predicted correlation) (Byrne, 2016); CMIN/DF addresses the limitations of  $\chi^2$  as noted above where an acceptable value is in the range one to three; Comparative Fit Index (CFI: Bentler, 1990) which takes sample size into account where its predecessor, the Normed Fit Index (NFI: Bentler & Bonnett, 1980) was sensitive to small sample sizes, the CFI should be close to one; Root Mean Square Error of Approximation (RMSEA) assesses how far the observed model is from the a model fit (Byrne, 2016), it should be  $< .08$  for an adequate fit or  $< .06$  for a good fit (Tabachnik & Fidell, 2014).

The current model fit is not adequate with SRMR = .0955, CMIN/DF = 2.034, CFI = .627, and RMSEA = .062. An SRMR  $< .05$  indicates a well-fitting model, therefore this model is less than adequate (Byrne, 2016). Whilst CMIN/DF is adequate at 2.034 (Byrne, 2016) and RMSEA is adequate at .062. The SRMR value should be  $< .08$  and the CFI is too low at .627. Therefore, this model does not fit the data. The following section will explore how the model can be modified to find a good fit.

Figure 5.1

*Amos first order model*

#### **5.4.4 Post-hoc modifications**

In Amos, potential model modifications are listed as Modification Indices (M.I.) and critical ratio (C.R.) values for estimates of observed variable regression weights. Tabachnik and Fidell (2014) warn against using structural equation modelling (SEM) for exploratory work without the necessary controls. They state that searching for the best fitting model is quite appropriate but steps need to be taken to protect against inflated Type I error levels and to use a conservative approach (where  $p < .01$ ) for both the LaGrange Multiplier and Wald tests. In this case  $p = .005$ , so modifications based on the Wald test and M.I.s (LaGrange Multiplier) are appropriate for this dataset. The LaGrange Multiplier is presented in Amos output as Modification Indices, this set of output refers to parameters that could be added to improve model fit. The Wald test is the opposite in that it asks if any parameters could be deleted or fixed to zero without a significant change in the equation. According to IBM, the Univariate Wald test index is identical to Amos' C.R. value (IBM, 2018).

Any post-hoc modifications to a model results in an exploratory factor analysis (EFA), and it is no longer a CFA (Byrne, 2016). Changes need to be made step by step due to the sensitivity of the parameter changes. In some cases, parameters will be added and in others, observed variables may be removed from the model. All actions will be justified whilst working towards a more parsimonious model (Byrne, 2016).

##### **5.4.4.1 Wald test - Reviewing the modification indices.**

Considering the estimates, one observed variable C.R. (critical ratio) value falls between 1.96 and -1.96. This variable is not significant and is not important to the model. The C.R. value in parameter estimates are the

univariate Wald test indices and variables that do not fit the criteria should be removed from the model (Byrne, 2016). The variable indicating a lack of connection with online friends (OT\_NoConnect) was found to be nonsignificant at 1.51 and was removed from the CFA.

#### **5.4.4.2 LaGrange Multiplier - Modification Indices – Covariances.**

Information regarding the model specification is described in the M.I.s in Amos, covariances and regression weights with an M.I. less than 10 are not considered problematic but those greater than 10 should be assessed during post-hoc modifications (Byrne, 2016). The estimated parameter change is how the overall  $\chi^2$  will change in response to adding a parameter. Therefore, in addition to high M.I.s, high parameter changes will be assessed during this post-hoc modification. Below is the process that was followed when assessing the necessity of a parameter change:

- Consider the covariances with the highest modification index and the parameter change (Byrne, 2016).
- Check the regression weights of the observed variables (items) to see if they are less than .4. This is standard EFA practice where items with lower factor loadings, such as .3 can be removed from the model (Pallant, 2013). However according to Tabachnik and Fidell (2014), items with factor loadings under .45 can be suppressed from the model. In this study, .4 is used as a guideline because that is the minimum that was used in the PCA in chapter four.

- Check the standardised residual correlations for the two observed variables. According to Tabachnik and Fidell (2014), values > 2.58 are problematic.
- Check the item content for the observed variables for overlap, in some cases, participants may have interpreted item content to be similar and this could be a reason for high covariance (Byrne, 2016).
- Assess the observed variables that cross-load on more than one latent variable. Cross-loading variables could be considered complex if they load similarly across latent variables (Byrne, 2016).

#### **5.4.5 The final model**

Nineteen modifications (Appendix M) were made to the original six factor model in response to the M.I.s., 12 of which were item removals from the model. The final model consists of six factors and 64 items.

Removing items from a model can result in a more adequate fit, however, current literature in the area of structural equation modelling does not suggest removing items, other than those that have no effect on the model fit statistics (Byrne, 2016). In addition, a Type I error must be avoided, where there is a false positive and a wrong model might be accepted as adequate (Tabachnick & Fidell, 2014). Awang (2015) suggests to remove items that have low loadings (below 0.6) and to remove items with high modification indices (above 15). However, current academic research on the development and validation of psychometric scales (e.g., Byrne, 2016; Tabachnik & Fidell, 2014) do not mention the removal of items. Therefore, this practice seems to be an outdated approach to an EFA using Amos. Other research has shown that modifying the model to add 18 design driven correlations or new parameters,

among error items resulted in a better fitting model (Frone & Tidwell, 2015), but this research did not remove items from the original scale.

Ultimately, the modification indices did not point towards a good fitting model. The final model fit was  $\chi^2 = 3408.588$ ,  $DF = 1932$ ,  $p = .005$  (Bollen-Stine bootstrap),  $SRMR = .0764$ ,  $CFI = .761$ ,  $TLI = .750$  and  $RMSEA = .054$ . Whilst the  $SRMR$  and  $RMSEA$  values are acceptable, the  $p$  value and  $CFI$  suggest an ill-fitting model. Explanations behind the resulted ill-fitting model could be attributed to the large sample size ( $N > 200$ ) where the  $p$  value may never indicate a good fitting model (Byrne, 2016), but possible reasons for this will be considered in the discussion.

#### **5.4.6 *Returning to an EFA in SPSS***

When modifications are made to a model during a CFA, it specifically becomes an EFA (Byrne, 2016). Tabachnik and Fidell (2014) described the development of objective tests for measurement in psychology as an iterative process where items are added and deleted, data is gathered and a PCA or an EFA is performed to improve the scale. The improved scale is then given to another set of participants. This process can be repeated as many times as is necessary to formulate a set of factors that represent the area to be measured. Returning to an EFA without changing the original six factor, 76 item model in Amos is considered acceptable practice (Feldt et al., 2011a; Taylor & Pastor, 2005; Yang & Lee, 2018). In the current study, further data collection did not take place because the model was not modified in Amos, therefore the dataset remains the same and an EFA will be carried out on 268 cases using SPSS. Therefore, the scale needs to be explored again, this time, by using an EFA as a continuation of analysing why the six component model did not fit the data.

With this in mind, the remainder of this chapter will focus on an EFA in SPSS with the current dataset ( $n = 268$ ).

The complexity of the six factor model with 76 items may have contributed towards the difficulty in obtaining a model fit with a significant number of changes to the model. In addition, the low reliability of two subscales (online social exclusion, losing connections with friends) needs to be addressed. Other research concerned with the area of measurement and evaluation of psychometric scales returned to an EFA in order to establish the best model fit for the dataset. In two separate CFAs of the SACQ (Baker & Siryk, 1986), researchers found that the model of the SACQ did not fit the data (Feldt et al., 2011a; Taylor & Pastor, 2005). They encountered issues similar to the findings of this study where the data was multivariate non-normal and there were few options to analyse non-normal data in CFA programs. They were restricted in their use of Satorra-Bentler corrections and used MLE without bootstrapping (Taylor & Pastor, 2005) and the Bollen-Stine bootstrap procedure (Feldt et al., 2011a). Given the violation of the multivariate normality assumption, both pieces of research used principal axis factoring with oblique rotation, where oblique rotation was justified on the basis that the factors should be allowed to correlate. Both studies used parallel analysis to confirm the interpretation of the scree plots. A further study into the use of social media and social college adjustment (Yang & Lee, 2018) found that their model did not fit the data and they returned to an EFA to clarify a factor structure.

The current data was previously assessed earlier in this study for suitability prior to the CFA. The number of cases for the EFA is therefore  $n = 268$ .

#### **5.4.6.1 Preliminary analysis.**

Given that the dataset was reduced to  $n = 268$  due to issues with nonnormality and differences between groups, it is necessary to report on the demographics for the smaller dataset.

The mean age of participants was 19.8 (SD = 3.1), with minimum age of 17 and maximum of 56. The gender breakdown was as follows where 151 (56.3%) of all participants were female, 106 (39.6%) identified as male and the remaining 11 (4%) identified as transgender male, gender variant/non-conforming, not listed and prefer not to answer. Of the 268 participants, 211 (78.7%) were in first year, 47 (17.5%) in second year, 1 (0.4%) in third year and 9 (3.4%) in fourth year. In total 13 (4.9%) participants were mature students and 255 (95.1%) were not. In total, 235 (88%) participants were Irish, the remaining 33 (12%) participants were from 17 different countries. The participants attended a range of different courses, of the 268 participants, 65 were from business courses (24%), 67 were from psychology courses (25%), 99 were from courses associated with film and creative technologies (37%), 35 were from courses associated with humanities (13%) and the remaining two were unspecified.

In total, 195 (72.8%) reported to be living with parents or caretaker, 31 (11.6%) were in private accommodation, and the remaining 42 (15.6%) were in a mix of own home, university accommodation, living with other family members and other forms of accommodation. Of the 268, 145 (54.1%) participants responded that they attended college straight from school and 196 (73.1%) participants held secondary education as their highest qualification on entering the course. In total, 182 (67.9%) participants reported that they received their



first choice of courses in college and 239 (89.2%) reported that English was their first language. Given that they were all studying at either an Irish institute or a UK university, it was assumed that their level of English comprehension was sufficient for completion of this study.

#### **5.4.6.2 Results.**

Pearson correlations on the six components from chapter four suggest component intercorrelation, and furthermore that the rotation method in chapter four should have been the direct Oblimin method and not Varimax rotation. Therefore, for the current study, the factors were extracted with principal factor analysis as the estimator and the direct Oblimin rotation method was used which allows factors to correlate.

Preliminary data analysis suggested that the six factors correlated significantly with each other. The rotation converged in 77 rotations. The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) was adequate at .818, Bartlett's test of sphericity was significant where  $p < .01$ , and  $\chi^2 = 9475.12$ , therefore the data was considered suitable for an EFA.

The correlation matrix showed that most items were  $\geq .3$  for at least one other item. The first EFA suggested 19 potential factors that explained 52.85% of the variance. The Eigenvalues (and percentage of variance explained) associated with the first six factors were 11.19 (14.16%), 8.47 (10.60%), 3.46 (3.94%), 3.08 (3.44%), 2.61 (2.83%) and 2.19 (2.29%). The sizeable drop of total variance from the second to the third factor suggests the retention of a two factor model. An investigation of Catell's scree plot (Catell, 1966) suggested a clear change in slope after the second factor and then again after the fifth factor (see Figure 5.2). According to Tabachnik and Fidell (2014), a scree plot is not

always sufficient in determining how many factors should be retained and they recommend using O'Connor's (2000) parallel analysis program to compare the Eigenvalues to the Eigenvalues of a randomly generated dataset using the parallel analysis syntax (O'Connor, 2000). The results of this suggested a 19 factor model (see Table 5.5). Using the results from the scree plot, percentage of variance explained and parallel analysis, models ranging from two to 19 factors will be investigated.

Table 5.5

*Parallel analysis results*

Factor	Initial Eigenvalues	Prcntyle
1	11.19	1.68
2	8.47	1.53
3	3.46	1.43
4	3.08	1.36
5	2.61	1.3
6	2.2	1.24
7	2.03	1.19
8	1.83	1.13
9	1.66	1.09
10	1.57	1.04
11	1.45	1
12	1.39	0.96
13	1.35	0.93
14	1.29	0.89
15	1.24	0.86
16	1.18	0.83
17	1.16	0.79
18	1.08	0.75
19	1.05	0.72

The 10 factor model and the models with 12 factors and above were problematic. Each model had at least one occurrence of one or more factors containing one item only, so these models were discarded. The 11 factor model had low loadings in the eighth factor and was discarded, the nine factor model did not load items onto a ninth factor. The eight factor model had low internal

reliability for factor seven and eight and was discarded. The seven factor model seemed acceptable regarding reliability scores. However, factor seven did not represent a clear single factor, the items were mixed, so this model was discarded. The six factor model had good internal reliability but had one problematic item which was removed and the analysis was conducted again. This resulted in factor six containing one item. The item was added back into the analysis in order to test the five factor model. Considering that this was the second attempt to reduce the dimensions of the student adjustment scale, the models ranging from two factors to four factors had a lower variance, 24.76% to 32.15% respectively, therefore the five factor model with 33.80% cumulative variance was considered the most suitable.

The factor structure comprised of 48 items, accounted for 33.80% of the variance, where each of the factors showed good internal reliability. The items within each factor were checked for relevancy to the factor. Items with coefficients  $< .4$  were suppressed and not included in the final scale.

Whilst the recommendation for naming factors is to review the item content for the top three high loading items (Tabachnik & Fidell, 2014), one of the issues that was taken into consideration when naming the factors was the scoring of the scale. The new scale is scored where 1 = 'strongly agree' and 7 = 'strongly disagree' therefore, it was considered necessary to name the factors in light of the higher score where high scores would reflect the ability to cope with changes brought about by college adjustment. For example, for factor one, with the highest loading item "I find it difficult to make friends on my course", was initially named 'social difficulties' but renamed to 'self-management of face to face social difficulties' where it is implied that the more that students can self-

manage social difficulties then the higher the score on the factor. In the case of the factors 'missing old friends' and 'difficulty navigating new challenges', all items in both factors are reverse scored. Therefore, the names of the factors represent the higher score. The five extracted factors and Cronbach's alpha scores are: 'Self-management of face to face social difficulties' where Cronbach's  $\alpha = .925$ ; 'Self-reliance from social media' where Cronbach's  $\alpha = .839$ ; 'Missing old friends' where Cronbach's  $\alpha = .741$ ; 'Difficulty navigating new challenges' where Cronbach's  $\alpha = .793$  and 'Managing spare time' where Cronbach's  $\alpha = .770$ . See Table 5.6 for the pattern matrix, Table 5.7 for the structure matrix and Table 5.8 for the communalities of the items. The factor structure can be seen in Table 5.10 including factor labels and Cronbach's alpha values.

Considering the correlations between the factors of the new scale (see Table 5.11), they are significantly correlated which is evidence of internal convergent validity. Using a Pearson's correlation, none of the factors correlate higher than .8 which suggests that none are measuring the same construct.

#### **5.4.6.2.1 Self-management of face to face social difficulties.**

This factor contains 18 items and describes difficulties in navigating new social circles during college adjustment. The 18 items have factor loadings that range from .429 to .808, and explains 13.95% of the variance. 'Self-management of face to face social difficulties' significantly negatively correlates with 'difficulty navigating new challenges' ( $r = -.26$ ,  $n = 268$ ,  $p < .01$ ), and significantly positively correlates with 'managing spare time' ( $r = .13$ ,  $n = 268$ ,  $p = .028$ ).

#### **5.4.6.2.2 Self-reliance from social media.**

This factor contains 14 items and explains the behaviour around using social media when starting college. The 14 items have loadings that range from .402 to .658, this factor explains 10.36% of the variance. 'Self-reliance from social media' significantly negatively correlates with 'missing old friends' ( $r = -.24, n = 268, p < .01$ ), 'difficulty navigating new challenges' ( $r = -.30, n = 268, p < .01$ ), and positively correlates with 'managing spare time' ( $r = .24, n = 268, p < .01$ ).

#### **5.4.6.2.3 Missing old friends.**

This factor contains four items, all of which are reverse scored. The factor explains how students may feel if they miss their old friends. The four item loadings range from .409 to .7, and this factor explains 3.7% of the variance. 'Missing old friends' has a significant positive relationship with 'difficulty navigating new challenges' ( $r = .28, n = 268, p < .01$ ) and significant negative relationships with 'self-reliance from social media' ( $r = -.24, n = 268, p < .01$ ) and 'managing spare time' ( $r = -.26, n = 268, p < .01$ ).

#### **5.4.6.2.4 Difficulty navigating new challenges.**

This factor contains eight items, all of which are reversed scored. 'Difficulty navigating new challenges' explains the new challenges that students may face during the college adjustment period, such as increased independent learning, taking responsibility for academic time management and maintaining old friendships. The eight item loadings range from .421 to .609 and explains 3.215% of the variance. 'Difficulty navigating new challenges' has significant negative relationships with 'self-management of face to face social difficulties' ( $r = -.26, n = 268, p < .01$ ), self-reliance from social media' ( $r = -.30, n = 268, p < .01$ ),

.01) and 'managing spare time' ( $r = -.24, n = 268, p < .01$ ). It also has a significant positive relationship with 'missing old friends' ( $r = .28, n = 268, p < .01$ ).

#### **5.4.6.2.5 *Managing spare time.***

This factor contains four items relating to difficulties in managing spare time that the student may have outside of college regarding managing relationships with old friends. The four item loadings range from .434 to .590 and explains 2.57% of the variance. Managing spare time has a significant positive relationship with 'self-management of face to face social difficulties' ( $r = .13, n = 268, p = .028$ ) and 'self-reliance from social media' ( $r = .24, n = 268, p = .028$ ) and significant negative relationships with 'missing old friends' ( $r = -.26, n = 268, p < .01$ ) and 'difficulty navigating new challenges' ( $r = -.24, n = 268, p < .01$ ).

Table 5.6

*Pattern matrix for the 5 factor model*

Item No.	Item	Factor				
		1	2	3	4	5
5	I find it difficult to make friends on my course	0.808				
22	I feel lonely at University/College	0.785				
29	I feel like I am the only one with no University/College friends	0.755				
9	I feel that my classmates don't know me	0.748				
13	I feel that I don't know my classmates	0.742		-0.138		
37	I have no one to talk to at University/College	0.736	-0.112			
17	I find it hard to make new friends as an adult	0.708	0.172			
33	I feel that none of the people I have met in University/College like me	0.699				0.196
25	I worry that I won't fit in with my classmates	0.648	0.137			0.263
69	I enjoy my University/College experience because of my college friends	-0.631	0.253		-0.111	0.293
2	I don't know how to go up to my classmates and get to know them	0.631	0.105			
41	I feel lonely in a large class	0.595				0.218
46	I find that it's easy to be lonely in University/College	0.576	0.108			0.154
66	My friends in University/College make it so much easier to get up in the morning	-0.550	0.216		-0.155	0.272
71	The friendships that I have in college have changed my life	-0.525	0.165	0.128	-0.174	0.261
54	If I had more University/College friends, I would love the course more	0.484	0.179		-0.276	-0.102
15	Sometimes I feel uncomfortable with content on group chats with University/College friends	0.457				0.191
27	I find it easier to have online only friends	0.429	0.240	0.265		
76	I feel that the University/College social life is non-existent	-0.384	0.203		0.171	
75	I would not be happy coming to University/College without the friends that I have met here	-0.371	0.240		-0.234	0.281
11	A negative online experience made me feel unwelcome in University/College	0.353		0.195	-0.225	
50	I have spoken to everyone on the course	0.284	0.143			-0.262
51	Social media and/or instant messaging makes me feel included in the University/College environment	-0.186	0.658			0.101

Item No.	Item	Factor				
		1	2	3	4	5
40	Social media and/or instant messaging instills a sense of community in the class		0.652		0.199	
20	I feel that I get to know my classmates better when I am friends with them on social media		0.612			-0.114
55	I feel that social media and/or instant messaging serves as a communal point for the class as the years progress		0.572			
10	I find that online interaction makes face to face social interactions easier		0.534			-0.118
26	I feel that I miss out on social events when I am not part of an online group chat		0.525	-0.153		
28	Online group chats relieve the stress of group work		0.511	0.205		
8	I feel that I would miss out on a social life if I didn't have social media accounts		0.490	-0.120	-0.139	
4	I would feel out of touch with my old friends without social media and/or instant messaging	0.167	0.473	-0.215		0.102
24	I find that online group chats are really useful for group work in college		0.472		0.103	0.132
1	I would feel disconnected with my life outside of University/College, if I didn't have instant messaging or social media		0.429			
6	I use instant messaging and social media to keep track of what my old friends are doing		0.417	-0.388		
31	Online group chats keep me motivated to push myself further in my work		0.416	0.196	-0.132	
45	My classmates are my friends on social media and/or instant messaging	-0.283	0.402			
18	I keep in touch with my old friends through social media and instant messaging more so than face to face	0.131	0.389		0.112	0.133
22	I frequently check my phone for messages	0.167	0.367	-0.101	-0.124	
42	I feel excluded when I am not part of my classmates social online group chats	0.114	0.357		-0.185	0.198
14	I like to see if my friends have seen my online message		0.354	-0.151	-0.133	
57	I find that it's easy to complain about the course or institute in online group chats		0.348		-0.208	
16	I use social media and instant messaging to stay in touch with old friends who moved away		0.303	-0.195		
30	I feel that it is necessary to create an online group chat to complete a group work assignment		0.299	0.165	-0.142	
36	I feel that my friends are with me when I am chatting to them online	0.124	0.284	-0.233		
44	All organisation for meeting up happens online	0.155	0.225			
59	I want to meet my old friends, face to face, to just sit down and talk			-0.700	0.102	0.248



Item No.	Item	Factor				
		1	2	3	4	5
34	I want to be included in my old friend's group chats			-0.659	-0.213	
32	I miss my old friends if I don't see them			-0.647		0.124
38	I want to see what my old friends are doing without me			-0.409	-0.217	
12	I feel included when I am part of my old friends' new online group chats		0.165	-0.395	-0.272	
47	When I get frustrated in University/College, I vent to my old friends online	0.170	0.140	-0.317	-0.132	0.102
74	I feel that I cannot have the same emotional connection with online friends through messaging or social media		-0.139	-0.293		0.166
56	I find it hard to do work on my own initiative		0.132		-0.590	-0.181
60	I find it demotivating when there is no one to tell me to do my work		0.117	-0.160	-0.576	
52	I find it difficult to get used to the fact that I am responsible for my own learning			-0.133	-0.570	
62	I find it difficult to motivate myself to attend because no one is taking attendance	0.103			-0.562	-0.103
48	I find it difficult to complete assignments on time because no one is actively looking for my work				-0.523	
68	I see my old friends having a great time online, and wish that I didn't have to go to University/College	0.235	-0.135		-0.493	0.131
64	I would not continue on the course if I had not made any friends in University/College	-0.176	0.232	0.109	-0.480	
49	It upsets me when I see online that my old friends are meeting up without me		0.126	-0.164	-0.434	0.129
19	I wish I chose the same career/academic path as my old friends	0.280		-0.105	-0.386	-0.123
23	I feel that my old friends are envious of the friends I've made in University/College	-0.179		0.210	-0.361	0.117
3	Sometimes, I feel under pressure by my old friends to make announcements on social media		0.154	0.102	-0.356	0.114
53	I feel awkward when people do not respond to my texts on group chat		0.341		-0.343	0.125
15	Sometimes I feel uncomfortable with content on group chats with old friends	0.152		0.196	-0.311	0.237
65	I find that it's hard to get my point across in group chats	0.179			-0.293	0.242
39	I think it's intrusive when friends refer to my social media posts on other social media platforms				-0.281	
35	I sometimes go to my old friends' University/College and stay there for the rest of the day	0.132	-0.160		-0.264	
43	I always add my old friends to my new online friends' group chat				-0.24	

Item No.	Item	Factor				
		1	2	3	4	5
61	It's hard to see my old friends because University/College is so busy			-0.284	0.109	0.582
70	I don't have time to see my old friends	0.180				0.555
63	I find that I do not have any spare time since starting University/College			-0.110		0.534
67	I feel that I am missing out on the University/College social life because my life is so busy	0.191				0.534
72	I feel it's hard to gauge reactions online					0.37
58	I am really nervous that I will not be good at the assignments	-0.106	-0.168		0.216	-0.297
73	I'm lucky to be on a course that I enjoy	-0.200	0.223	-0.111	0.276	0.290

Table 5.7

*Structure matrix for the 5 factor model*

Item No.	Item	Factor				
		1	2	3	4	5
5	I find it difficult to make friends on my course	0.799			-0.165	-0.121
22	I feel lonely at University/College	0.785			-0.233	
29	I feel like I am the only one with no University/College friends	0.757			-0.222	
9	I feel that my classmates don't know me	0.744		-0.107	-0.218	
13	I feel that I don't know my classmates	0.738		-0.174	-0.164	
37	I have no one to talk to at University/College	0.736	-0.117		-0.157	
17	I find it hard to make new friends as an adult	0.722	0.178		-0.296	
33	I feel that none of the people I have met in University/College like me	0.717			-0.308	0.188
25	I worry that I won't fit in with my classmates	0.650	0.193		-0.292	0.283
2	I don't know how to go up to my classmates and get to know them	0.646	0.108		-0.239	
69	I enjoy my University/College experience because of my college friends	-0.613	0.339			0.375
41	I feel lonely in a large class	0.593			-0.209	0.210
46	I find that it's easy to be lonely in University/College	0.587	0.149		-0.262	0.177
54	If I had more University/College friends, I would love the course more	0.559	0.223		-0.428	
66	My friends in University/College make it so much easier to get up in the morning	-0.520	0.307		-0.112	0.353
71	The friendships that I have in college have changed my life	-0.493	0.252		-0.117	0.328
15	Sometimes I feel uncomfortable with content on group chats with University/College friends	0.476			-0.238	0.188
27	I find it easier to have online only friends	0.438	0.210	0.217	-0.212	
76	I feel that the University/College social life is non-existent	-0.430	0.155		0.234	
11	A negative online experience made me feel unwelcome in University/College	0.400		0.146	-0.310	
50	I have spoken to everyone on the course	0.301	0.103			-0.222
51	Social media and/or instant messaging makes me feel included in the University/College environment	-0.214	0.662			0.226
40	Social media and/or instant messaging instils a sense of community in the class		0.619	-0.138		0.132

Item No.	Item	Factor				
		1	2	3	4	5
20	I feel that I get to know my classmates better when I am friends with them on social media		0.594		-0.135	
26	I feel that I miss out on social events when I am not part of an online group chat		0.579	-0.226	-0.238	0.228
55	I feel that social media and/or instant messaging serves as a communal point for the class as the years progress		0.570		-0.120	0.123
8	I feel that I would miss out on a social life if I didn't have social media accounts		0.541	-0.192	-0.281	0.171
4	I would feel out of touch with my old friends without social media and/or instant messaging	0.172	0.516	-0.285	-0.199	0.220
10	I find that online interaction makes face to face social interactions easier		0.510		-0.133	
6	I use instant messaging and social media to keep track of what my old friends are doing		0.484	-0.445	-0.227	0.185
28	Online group chats relieve the stress of group work		0.473	0.158		
24	I find that online group chats are really useful for group work in college	-0.138	0.465			0.200
53	I feel awkward when people do not respond to my texts on group chat		0.457	-0.164	-0.453	0.276
1	I would feel disconnected with my life outside of University/College, if I didn't have instant messaging or social media		0.455	-0.120	-0.201	0.114
42	I feel excluded when I am not part of my classmates social online group chats	0.159	0.447	-0.142	-0.347	0.314
31	Online group chats keep me motivated to push myself further in my work		0.441	0.136	-0.198	0.158
45	My classmates are my friends on social media and/or instant messaging	-0.284	0.427			0.181
14	I like to see if my friends have seen my online message		0.411	-0.208	-0.244	0.164
22	I frequently check my phone for messages	0.202	0.400	-0.159	-0.260	
57	I find that it's easy to complain about the course or institute in online group chats		0.389	-0.143	-0.285	
18	I keep in touch with my old friends through social media and instant messaging more so than face to face		0.386			0.185
16	I use social media and instant messaging to stay in touch with old friends who moved away		0.322	-0.226		0.112
30	I feel that it is necessary to create an online group chat to complete a group work assignment		0.321	0.115	-0.203	
36	I feel that my friends are with me when I am chatting to them online	0.134	0.292	-0.262	-0.102	
44	All organisation for meeting up happens online	0.157	0.233		-0.124	
59	I want to meet my old friends, face to face, to just sit down and talk		0.117	-0.716		0.308

Item No.	Item	Factor				
		1	2	3	4	5
34	I want to be included in my old friend's group chats		0.166	-0.679	-0.266	
32	I miss my old friends if I don't see them	0.127		-0.668	-0.143	0.198
38	I want to see what my old friends are doing without me		0.166	-0.439	-0.277	
12	I feel included when I am part of my old friends' new online group chats		0.256	-0.428	-0.312	
47	When I get frustrated in University/College, I vent to my old friends online	0.219	0.226	-0.366	-0.265	0.190
74	I feel that I cannot have the same emotional connection with online friends through messaging or social media			-0.291		0.168
60	I find it demotivating when there is no one to tell me to do my work	0.132	0.266	-0.229	-0.609	0.136
52	I find it difficult to get used to the fact that I am responsible for my own learning		0.238	-0.202	-0.592	0.193
56	I find it hard to do work on my own initiative	0.123	0.245	-0.148	-0.583	
68	I see my old friends having a great time online, and wish that I didn't have to go to University/College	0.364			-0.553	0.204
62	I find it difficult to motivate myself to attend because no one is taking attendance	0.252			-0.543	
48	I find it difficult to complete assignments on time because no one is actively looking for my work	0.170	0.126	-0.142	-0.528	
49	It upsets me when I see online that my old friends are meeting up without me	0.167	0.274	-0.240	-0.521	0.263
64	I would not continue on the course if I had not made any friends in University/College		0.350		-0.492	0.204
3	Sometimes, I feel under pressure by my old friends to make announcements on social media	0.174	0.251		-0.429	0.207
19	I wish I chose the same career/academic path as my old friends	0.390		-0.137	-0.421	
65	I find that it's hard to get my point across in group chats	0.253	0.103	-0.102	-0.389	0.299
15	Sometimes I feel uncomfortable with content on group chats with University/College friends	0.218	0.101	0.129	-0.380	0.277
23	I feel that my old friends are envious of the friends I've made in University/College		0.185	0.159	-0.339	0.192
35	I sometimes go to my old friends' University/College and stay there for the rest of the day	0.204			-0.287	0.122
39	I think it's intrusive when friends refer to my social media posts on other social media platforms				-0.282	0.124
43	I always add my old friends to my new online friends' group chat	0.115			-0.242	

Item No.	Item	Factor				
		1	2	3	4	5
61	It's hard to see my old friends because University/College is so busy		0.223	-0.347		0.611
70	I don't have time to see my old friends	0.167	0.157		-0.166	0.560
63	I find that I do not have any spare time since starting University/College		0.121	-0.174	-0.170	0.551
67	I feel that I am missing out on the University/College social life because my life is so busy	0.201			-0.217	0.532
72	I feel it's hard to gauge reactions online		0.136	-0.113		0.394
75	I would not be happy coming to University/College without the friends that I have met here	-0.318	0.357		-0.251	0.386
58	I am really nervous that I will not be good at the assignments	-0.159	-0.289	0.164	0.354	-0.384
73	I'm lucky to be on a course that I enjoy	-0.273	0.231	-0.127	0.203	0.296

Table 5.8

*Communalities*

Item No.	Item	Initial	Extraction
1	I would feel disconnected with my life outside of University/College, if I didn't have instant messaging or social media	0.481	0.222
2	I don't know how to go up to my classmates and get to know them	0.738	0.433
3	Sometimes, I feel under pressure by my old friends to make announcements on social media	0.492	0.234
4	I would feel out of touch with my old friends without social media and/or instant messaging	0.586	0.357
5	I find it difficult to make friends on my course	0.793	0.658
6	I use instant messaging and social media to keep track of what my old friends are doing	0.563	0.400
7	Sometimes I feel uncomfortable with content on group chats with old friends	0.527	0.242
8	I feel that I would miss out on a social life if I didn't have social media accounts	0.574	0.334
9	I feel that my classmates don't know me	0.715	0.571
10	I find that online interaction makes face to face social interactions easier	0.484	0.279
11	A negative online experience made me feel unwelcome in University/College	0.540	0.245
12	I feel included when I am part of my old friends' new online group chats	0.470	0.291
13	I feel that I don't know my classmates	0.707	0.570
14	I like to see if my friends have seen my online message	0.482	0.217
15	Sometimes I feel uncomfortable with content on group chats with University/College friends	0.500	0.275
16	I use social media and instant messaging to stay in touch with old friends who moved away	0.414	0.144
17	I find it hard to make new friends as an adult	0.704	0.565
18	I keep in touch with my old friends through social media and instant messaging more so than face to face	0.434	0.182
19	I wish I chose the same career/academic path as my old friends	0.583	0.296
20	I feel that I get to know my classmates better when I am friends with them on social media	0.563	0.365
21	I feel lonely at University/College	0.767	0.627
22	I frequently check my phone for messages	0.411	0.227

Item No.	Item	Initial	Extraction
23	I feel that my old friends are envious of the friends I've made in University/College	0.451	0.214
24	I find that online group chats are really useful for group work in college	0.496	0.264
25	I worry that I won't fit in with my classmates	0.626	0.531
26	I feel that I miss out on social events when I am not part of an online group chat	0.580	0.378
27	I find it easier to have online only friends	0.498	0.321
28	Online group chats relieve the stress of group work	0.486	0.271
29	I feel like I am the only one with no University/College friends	0.686	0.582
30	I feel that it is necessary to create an online group chat to complete a group work assignment	0.451	0.146
31	Online group chats keep me motivated to push myself further in my work	0.542	0.254
32	I miss my old friends if I don't see them	0.599	0.472
33	I feel that none of the people I have met in University/College like me	0.755	0.568
34	I want to be included in my old friend's group chats	0.591	0.509
35	I sometimes go to my old friends' University/College and stay there for the rest of the day	0.423	0.132
36	I feel that my friends are with me when I am chatting to them online	0.395	0.159
37	I have no one to talk to at University/College	0.689	0.556
38	I want to see what my old friends are doing without me	0.485	0.251
39	I think it's intrusive when friends refer to my social media posts on other social media platforms	0.353	0.086
40	Social media and/or instant messaging instils a sense of community in the class	0.607	0.427
41	I feel lonely in a large class	0.583	0.402
42	I feel excluded when I am not part of my classmates social online group chats	0.598	0.312
43	I always add my old friends to my new online friends' group chat	0.434	0.067
44	All organisation for meeting up happens online	0.430	0.084
45	My classmates are my friends on social media and/or instant messaging	0.536	0.270
46	I find that it's easy to be lonely in University/College	0.616	0.397
47	When I get frustrated in University/College, I vent to my old friends online	0.459	0.239
48	I find it difficult to complete assignments on time because no one is actively looking for my work	0.526	0.291
49	It upsets me when I see online that my old friends are meeting up without me	0.525	0.342
51	Social media and/or instant messaging makes me feel included in the University/College environment	0.640	0.495
52	I find it difficult to get used to the fact that I am responsible for my own learning	0.553	0.385



Item No.	Item	Initial	Extraction
53	I feel awkward when people do not respond to my texts on group chat	0.567	0.357
54	If I had more University/College friends, I would love the course more	0.582	0.433
55	I feel that social media and/or instant messaging serves as a communal point for the class as the years progress	0.564	0.326
56	I find it hard to do work on my own initiative	0.562	0.389
57	I find that it's easy to complain about the course or institute in online group chats	0.405	0.205
59	I want to meet my old friends, face to face, to just sit down and talk	0.654	0.579
60	I find it demotivating when there is no one to tell me to do my work	0.677	0.412
61	It's hard to see my old friends because University/College is so busy	0.672	0.468
62	I find it difficult to motivate myself to attend because no one is taking attendance	0.470	0.330
63	I find that I do not have any spare time since starting University/College	0.602	0.321
64	I would not continue on the course if I had not made any friends in University/College	0.570	0.345
65	I find that it's hard to get my point across in group chats	0.497	0.233
66	My friends in University/College make it so much easier to get up in the morning	0.649	0.468
67	I feel that I am missing out on the University/College social life because my life is so busy	0.532	0.337
68	I see my old friends having a great time online, and wish that I didn't have to go to University/College	0.632	0.387
70	I don't have time to see my old friends	0.604	0.347
71	The friendships that I have in college have changed my life	0.583	0.418
72	I feel it's hard to gauge reactions online	0.414	0.170
73	I'm lucky to be on a course that I enjoy	0.531	0.262
74	I feel that I cannot have the same emotional connection with online friends through messaging or social media	0.428	0.128
75	I would not be happy coming to University/College without the friends that I have met here	0.658	0.371
50	I have spoken to everyone on the course	0.441	0.169
58	I am really nervous that I will not be good at the assignments	0.580	0.270
76	I feel that the University/College social life is non-existent	0.605	0.238
69	I enjoy my University/College experience because of my college friends	0.736	0.590

The factor correlation matrix can be seen in Table 5.9. Correlations between the factors are quite low, ranging from  $r = .01$  to  $r = .26$  but according to Pallant (2013), similar solutions could be expected from both varimax and direct Oblimin rotation. Therefore, using direct Oblimin was appropriate for this analysis.

Table 5.9

*Factor correlation matrix (EFA output)*

Factor	1	2	3	4	5
1	1.00				
2	-0.01	1.00			
3	-0.05	-0.11	1.00		
4	-0.26	-0.24	0.10	1.00	
5	-0.02	0.21	-0.11	-0.21	1.00

Table 5.10

*Items contributing towards the components of the new scale and Cronbach's alpha scores*

Item No.	Factor	1	2	3	4	5
<b>Self-Management of Face to Face Social Difficulties</b>						
5	I find it difficult to make friends on my course	0.808				
22	I feel lonely at University/College	0.785				
29	I feel like I am the only one with no University/College friends	0.755				
9	I feel that my classmates don't know me	0.748				
13	I feel that I don't know my classmates	0.742				
37	I have no one to talk to at University/College	0.736				
17	I find it hard to make new friends as an adult	0.708				
33	I feel that none of the people I have met in University/College like me	0.699				
25	I worry that I won't fit in with my classmates	0.648				
69	I enjoy my University/College experience because of my college friends (R)	-0.63				
2	I don't know how to go up to my classmates and get to know them	0.631				
42	I feel lonely in a large class	0.595				
46	I find that it's easy to be lonely in University/College	0.576				
65	My friends in University/College make it so much easier to get up in the morning (R)	-0.55				
71	The friendships that I have in college have changed my life (R)	-0.53				
54	If I had more University/College friends, I would love the course more	0.484				
7	Sometimes I feel uncomfortable with content on group chats with University/College friends	0.457				
27	I find it easier to have online only friends	0.429				

Item No.	Factor	1	2	3	4	5
<b>Self-reliance from social media</b>						
51	Social media and/or instant messaging makes me feel included in the University/College environment		0.658			
40	Social media and/or instant messaging instills a sense of community in the class		0.652			
20	I feel that I get to know my classmates better when I am friends with them on social media		0.612			
55	I feel that social media and/or instant messaging serves as a communal point for the class as the years progress		0.572			
10	I find that online interaction makes face to face social interactions easier		0.534			
26	I feel that I miss out on social events when I am not part of an online group chat		0.525			
28	Online group chats relieve the stress of group work		0.511			
8	I feel that I would miss out on a social life if I didn't have social media accounts		0.490			
4	I would feel out of touch with my old friends without social media and/or instant messaging		0.473			
24	I find that online group chats are really useful for group work in college		0.472			
1	I would feel disconnected with my life outside of University/College, if I didn't have instant messaging or social media		0.429			
6	I use instant messaging and social media to keep track of what my old friends are doing		0.417			
31	Online group chats keep me motivated to push myself further in my work		0.416			
45	My classmates are my friends on social media and/or instant messaging		0.402			
<b>Missing Old Friends</b>						
59	I want to meet my old friends, face to face, to just sit down and talk (R)			-0.700		
34	I want to be included in my old friend's group chats (R)			-0.659		
32	I miss my old friends if I don't see them (R)			-0.647		
38	I want to see what my old friends are doing without me (R)			-0.409		

Item No.	Factor	1	2	3	4	5
<b>Difficulty Navigating New Challenges</b>						
56	I find it hard to do work on my own initiative (R)				-0.590	
60	I find it demotivating when there is no one to tell me to do my work (R)				-0.576	
52	I find it difficult to get used to the fact that I am responsible for my own learning (R)				-0.570	
62	I find it difficult to motivate myself to attend because no one is taking attendance (R)				-0.562	
48	I find it difficult to complete assignments on time because no one is actively looking for my work (R)				-0.523	
68	I see my old friends having a great time online, and wish that I didn't have to go to University/College (R)				-0.493	
64	I would not continue on the course if I had not made any friends in University/College (R)				-0.480	
49	It upsets me when I see online that my old friends are meeting up without me (R)				-0.434	
<b>Managing Spare Time</b>						
61	It's hard to see my old friends because University/College is so busy					0.582
70	I don't have time to see my old friends					0.555
63	I find that I do not have any spare time since starting University/College					0.534
67	I feel that I am missing out on the University/College social life because my life is so busy					0.534
<b>Cronbach's Alpha</b>		<b>0.925</b>	<b>0.839</b>	<b>0.741</b>	<b>0.793</b>	<b>0.77</b>

Table 5.11

*Intercorrelations of the new scale factors and the CAT factors (standard deviations in brackets)*

No.	Factor	Mean (SD)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)	Overall New Scale	186.56 (22.34)	1									
(2)	Self-management of F2F social difficulties	85.42 (20.05)	.80**	1								
(3)	Self-reliance from social media	38.31 (10.88)	.37**	-0.01	1							
(4)	Missing old friends	20.08 (4.58)	0.07	-0.08	-.24**	1						
(5)	Difficulty navigating new challenges	30.01 (9.15)	0.03	-.26**	-.30**	.28**	1					
(6)	Managing spare time	12.74 (5.18)	.31**	.13*	.24**	-.26**	-.24**	1				
(7)	CAT Overall	74.38 (16.74)	.45**	.62**	.12*	-.28**	-.44**	.33**	1			
(8)	CAT Positive Affect	28.30 (5.69)	.28**	.49**	-0.08	-0.00	-.30**	-0.01	.55**	1		
(9)	CAT Negative Affect	42.85 (11.66)	-.39**	-.48**	-.21**	.26**	.42**	-.36**	-.90**	-.26**	1	
(10)	CAT Homesickness	24.63 (7.32)	-.41**	-.54**	-0.06	.31**	.28**	-.32**	-.82**	-.21**	.68**	1

*Note.* Ratings for the new scale: 1 = 'strongly agree' to 7 = 'strongly disagree'; Ratings for the CAT: 1 = 'not at all' to 7 = 'a great deal'.

Pearson's correlations. \*  $p < 0.05$ , two-tailed. \*\*  $p < 0.01$ , two-tailed.

#### 5.4.6.3 Convergent validity analysis with the CAT.

The CAT (Pennebaker et al., 1990) was used to validate the student adjustment scale in relation to convergent validity. A correlation analysis was run to address the question of whether there were any relationships between the new scale factors and the factors of the CAT (Pennebaker et al., 1990), see Table 5.11. The CAT (Cronbach's  $\alpha = .821$ ) has three factors: positive affect (Cronbach's  $\alpha = .654$ ), negative affect (Cronbach's  $\alpha = .859$ ) and homesickness (Cronbach's  $\alpha = .679$ ).

Using Pearson's correlation, 'self-management of face to face social difficulties' has a significant positive relationship with the 'positive affect' of college adjustment ( $r = .49, n = 268, p < .01$ ). It also had a significant negative relationship with the 'negative affect' of college adjustment ( $r = -.48, n = 268, p < .01$ ) and homesickness ( $r = -.54, n = 268, p < .01$ ). 'Self-reliance from social media' has a significant negative relationship with the 'negative affect' of college adjustment ( $r = -.21, n = 268, p < .01$ ) which suggests that the less reliance on social media then the less 'negative affect' of college adjustment. 'Missing old friends' has a significant positive relationship with the 'negative affect' of college adjustment ( $r = .26, n = 268, p < .01$ ) and with homesickness ( $r = .31, n = 268, p < .01$ ). 'Difficulty navigating new challenges' has a significant negative relationship with the 'positive affect' of college adjustment ( $r = -.30, n = 268, p < .01$ ). It also significantly positively correlates with the 'negative affect' of college adjustment ( $r = .42, n = 268, p < .01$ ) and homesickness ( $r = .28, n = 268, p < .01$ ). 'Managing spare time' has significant negative relationships with the 'negative affect' of college adjustment ( $r = -.36, n = 268, p < .01$ ) and homesickness ( $r = -.32, n = 268, p < .01$ ).

Convergent validity using Pearson's correlation, is evidenced in the significant correlations found between the factors of the student adjustment scale and the CAT scales. This suggests that the new scale is measuring a similar construct as the previously published CAT. A correlation analysis of the total score of the CAT and the student adjustment scale was significant ( $r = .45$ ,  $n = 268$ ,  $p < .01$ ), suggesting the two scales are significantly positively correlated and therefore the new scale demonstrates convergent validity.

#### **5.4.7 Summary of findings**

The six factor model did not fit the data. After conducting an EFA, the student adjustment scale was further refined to a five factor model with 48 items. Internal convergent validity was established between the subscales of the new scale and external convergent validity was established between the new scale and the CAT.

### **5.5 Discussion**

College adjustment scale development literature tends to be lacking in reporting validity tests (Baker & Siryk, 1986; Brower, 1994; Crombag, 1968; Pascarella & Terenzini, 1980; Pennebaker et al., 1990), which constituted the design of this study. The development of the student adjustment scale involved testing the structure of the scale and resulted in similar outcomes to studies that had attempted the same approach on the SACQ (Baker & Siryk, 1989; Feldt et al., 2011a; Taylor & Pastor, 2005). The discussion section will be structured so that all aspects of the analysis from the CFA to the results of the EFA are considered.

The original six factor model, as developed in chapter four, did not fit the data. In addition, the CFA assumption of multivariate normality was violated



which could be due to the multi-facets of college adjustment (Feldt et al., 2011a; Taylor & Pastor, 2005). Furthermore, according to Tabachnick and Fidell (2014), multivariate nonnormality can be due to the sample of multiple populations in one dataset and there were participants from 14 different courses in the dataset. Data from students across multiple courses and different years of study was collected for the current study because college adjustment is not necessarily experienced by a single cohort of students (Baker & Siryk, 1986; Kalpidou et al., 2011; Taylor & Pastor, 2005). Therefore, there is merit in considering that this broad spectrum of courses may have contributed towards multivariate nonnormal data (Tabachnik & Fidell, 2014). However, in previous research, using datasets from first year students only did not affect this outcome and the authors reported issues of multivariate nonnormality (Feldt et al., 2011a).

Furthermore, data pattern difference between chapter four and the current chapter, could be attributed to transient emotional states, where social media use and college adjustment may be influenced by states, such as anxiety surrounding an upcoming exam or assignment deadline. In these cases, college adjustment issues may influence students to behave in a certain way so that social media use is state-dependent and satisfies a short-term need to alleviate anxiety (Katz et al., 1974).

There are some contradictions between popular opinion and current literature regarding the removal of items during a CFA (Byrne, 2016; Gaskin, 2020). None of the multivariate statistics texts condone the removal of items with high modification index values during a CFA (Byrne, 2016; Tabachnik & Fidell, 2014). In addition, according to Tabachnik and Fidell (2014), tests of

model modifications may not reveal the true model. In this case, model modifications did not result in a good model fit, therefore the modifications that were made were discarded in favour of returning to an EFA through SPSS (Feldt et al., 2011a; Taylor & Pastor, 2005; Yang & Lee, 2018) which yielded a five factor model with 48 items. The new subscales and overall scale of the five factor model demonstrated good internal reliability and there was evidence of internal convergent validity between the subscales.

College adjustment scale validation in previous literature tends to be limited to an EFA and reports of internal reliability. Most of the literature reviewed as part of this study did not report results from a CFA, possibly because it was not standard practice when measurements were developed (Baker & Siryk, 1986; Pace, 1984; Pascarella & Terenzini, 1980; Pennebaker et al., 1990). However, literature on the development of two recent scales reported adequate model fit statistics after a post-hoc removal of items which according to Byrne (2016), the analysis returns to an EFA once any post-hoc modifications are made (O'Donnell et al., 2018; Watson & Lenz, 2018). Social media scale development literature either did not report on construct validation or reported inadequate results as a model fit (Ali et al., 2020; Li et al., 2016). Whilst in the current study, some of the model fit statistics were adequate but the model was rejected due to inadequate SRMR and CFI values.

#### ***5.5.1 Comparison of the six component and five factor new college adjustment model***

The original six component model comprised of: 'Online social cohesion'; 'Social difficulties'; 'Online social exclusion'; 'Academic and Interpersonal skills'; 'Losing connections with friends' and 'Social Interactions'. The new five factor

model was similar to the original model, with regard to the retainment of items relating to the overarching themes as identified in chapter three: 'Social cohesion', 'peer group influences', 'social exclusion' and 'academic and interpersonal skills'. The items relating to quotes from the overarching theme for 'social media and instant messaging etiquette' were eliminated from the final scale. This theme contained items concerning the use of social media, habits and behaviours. The final student adjustment scale is focussed on managing interpersonal skills and friendships, both online and face to face.

The new scale was further validated in this study whereby an EFA further reduced the items and narrowed the scale to measure interpersonal skills, peer influences and social adjustment to college. The final scale is a five factor model, each of the factors and the overall scale will be discussed in relation to the content, reliability and significant correlations with other subscales and the CAT (Pennebaker et al., 1990). One of the factors that failed to reach the .7 cut off for Cronbach's alpha from the original 6 component scale ('social interactions') was eliminated from the new scale through the EFA.

### **5.5.2 Overall scale**

The new five factor scale covers aspects of social, interpersonal and peer group influences on college adjustment which are addressed in the college adjustment literature through social and personal-emotional adjustment subscales (Baker & Siryk, 1989). There was a significant positive relationship between the new scale overall score and the overall CAT (Pennebaker et al., 1990). Considering that the new scale is a 7-point Likert scale where 1 = 'strongly agree' and 7 = 'strongly disagree', and the CAT is a 7-point Likert scale where 1 = 'not at all' to 7 = 'a great deal', a positive relationship between

the overall score of the new scale and the CAT suggests that the new scale is measuring a negative aspect of college adjustment. A positive relationship between the overall CAT and overall mean of the new scale, suggests that the new scale demonstrates convergent validity. However, in contrast to previous college adjustment literature, an overall score for the new scale by adding the factor scores, does not give an overall score as some factors are positively related to college adjustment and others are not. Considering the directions of the intercorrelations between the factors, it is not feasible to add the scores and produce an overall score for the entire scale. Therefore, similar to other measurement scales, such as personality (Costa & McCrae, 2008; Goldberg, 1992, 1999), where different traits are separate and not part of an overall scale, this student adjustment scale is best considered as multi-faceted with five facets of college adjustment. Whilst the SACQ (Baker & Siryk, 1989) and the CAT (Pennebaker et al., 1990) produce an overall college adjustment score, it is not standard practice in the college adjustment literature. More recently developed scales consider college adjustment to be multi-faceted and similar to the approach of this study, they do not produce an overall score for the scale such as the INCA (Watson & Lenz, 2018) and the College Adjustment Questionnaire (O'Donnell et al., 2018). Therefore, the overall student adjustment score will not be considered as part of this new scale.

### ***5.5.3 Self-management of face to face social difficulties***

This factor describes the difficulties in navigating new social circles during college adjustment and is aligned to the overarching theme, from chapter three, 'Peer Group Influences'. Previous research, using the SACQ (Baker & Siryk, 1989) suggests that the higher the social adjustment scores in college

adjustment then the more likely the student feels at ease with getting to know the college environment (Hurtado et al., 1996), and therefore plays a pivotal role in college adjustment. This factor contains all of the items associated with feelings of negativity surrounding the difficulties of meeting new people and making friends and is related to the need to belong (Baumeister & Leary, 1995). Students may find difficulty in meeting this need and therefore college adjustment is negatively impacted by social acceptance (Freeman et al., 2007), motivation and engagement (Zumbrunn et al., 2012), and academic achievement (Wilson et al., 2015). The intercorrelations of the new scale suggest that 'self-management with face to face social difficulties' positively correlates with 'managing spare time', which suggests that the more effective at managing face to face social difficulties then the less difficult it is for students to manage their time outside of college. The negative relationship with 'difficulty navigating new challenges' suggests something similar, where students' ability to meet new challenges such as independent learning and managing friendships, are related to their ability to manage social difficulties. Which is in line with previous literature that examined the need to belong and academic pursuits (Bowman et al., 2019; Wilson et al., 2015).

The items in the factor 'self-management of face to face social difficulties' are similar to items in the 'negative affect' factor for the CAT with regard to feelings of loneliness and anxiety regarding meeting new people in college: e.g. "I find it difficult to make friends on my course" and "I feel like I'm the only one with no university/college friends". The factors are significantly negatively correlated which suggests that social difficulties has a negative relationship with college adjustment. Similarly, a negative relationship exists with 'homesickness'

where an increase in levels of social difficulties correlates with increased levels of homesickness, this could be due to participants not being able to make friends in college and therefore experience friendsickness (Paul & Brier, 2000). 'Self-management of face to face social difficulties' has a significant positive relationship with the overall CAT and the 'positive affect' of college adjustment which suggests managing their social interactions effectively may contribute towards a positive college adjustment experience.

#### **5.5.4 *Self-reliance from social media***

This factor contains 14 items and explains the behaviour around using social media when starting college and is aligned to the overarching theme 'Social Cohesion' from chapter three. It contains all of the items associated with old friends and new college friends and how they interact online. The factor name is relevant to students' use of social media and measures how reliant students are on social media during college adjustment. In this factor, the higher the score then the higher the self-reliance from social media (where the student possibly does not place importance on using social media) and the lower the score suggests a decrease in self-reliance from social media where students may find that they rely on social media during the college adjustment period.

Feelings around maintenance and keeping track of old friendships are relevant to this factor in addition to feelings of inclusion, when it comes to social media and instant messaging with new college friends and old friends. These items highlight the importance of the use of social media and instant messaging to students who are starting college. This factor is not replicated in any of the current college adjustment scales, a reason being that the facet of social media use in college adjustment was previously addressed in literature by developing

a scale specifically for the study at hand (Raacke & Bonds-Raacke, 2015; Ramirez & Broneck, 2009; Ranney & Troop-Gordon, 2012; Subrahmanyam et al., 2008; Yang & Brown, 2015).

The negative relationship with 'missing old friends' suggests that those who have a higher self-reliance from social media may not be missing their friends. This finding could be related to the sample for this study. Almost 73% of participants lived at home, the high proportion of those living at home may account for the fact that some students may not have lost touch with their old friends and therefore do not miss them. The significant positive relationship with 'managing spare time' suggests that higher levels of self-reliance from social media implies less difficulty in managing spare time.

This factor represents the online aspect of this study. Therefore, the research question regarding the role of social media in college adjustment is addressed here. The results suggest that the less a student feels included online with their peers then the more successful they are at navigating new challenges and the less they miss their old friends. While this is a surprising outcome where generally social media is associated with better social adjustment (Gray et al., 2013; Yang & Brown, 2013), other research suggests that social media use has no impact on college adjustment (Yang & Lee, 2018). It could be suggested that time spent on social media could be spent more productively elsewhere on other activities such as navigating new academic, social and time management challenges. Similarly, 'self-reliance from social media' had a significant negative relationship with 'negative affect' in the CAT, where the higher the score then the less negative effect of college adjustment. In addition, 'self-reliance from social media' correlated negatively with 'difficulty

navigating new challenges' and 'difficulty managing spare time'. Consistent with other research that was specifically focussed on Facebook, the intercorrelations between the factors of the student adjustment scale suggest similar findings where Facebook use was negatively correlated to college engagement and academic adjustment amongst first year students (DeAndrea et al., 2012; LaRose et al., 2011), except that the current study is not limited to first year students and Facebook.

Evidence of discriminant validity exists where there is no significant relationship between 'self-management of face to face social difficulties' and 'self-reliance from social media'. Similar to findings from chapter three, where participants found that friendships could be maintained but not developed online, social media platforms are used to maintain old friendships or to find out more about potential friends (Ellison et al., 2007; Jeon et al., 2016).

#### **5.5.5 *Missing old friends***

This factor contains four items, all of which are reverse scored. The factor explains how students may feel if they miss their old friends and is aligned with the overarching theme 'Social Cohesion' in chapter three. Previous college adjustment research has shown that students can miss their friends from home or school and that this could have a detrimental impact on college adjustment (Paul & Brier, 2001). In the current dataset, over 70% of the participants lived at home and so did not experience moving away from friends or family, however, the presence of this factor suggests that friendsickness still exists amongst college students, even with the prevalence of social media. Regarding the relationship to other college adjustment scales, the items in this factor are similar to the homesickness factor in the CAT (Pennebaker et al.,



1990). Other literature that used the SACQ (Baker & Siryk, 1989) suggests that students who are better socially adjusted are likely to maintain friendships over time and more likely to spend more time socialising with friends (Hurtado et al., 1996).

‘Missing old friends’ has a significant positive relationship with ‘difficulty navigating new challenges’, the relationship suggests that students who miss their old friends then the less successful they are in navigating new challenges such as academic organisation and interpersonal skills.

The significant negative relationship with ‘managing spare time’ suggests that students who are less likely to miss their old friends will experience less difficulties at managing spare time. In relation to the CAT (Pennebaker et al., 1990), ‘missing old friends’ negatively correlates with the overall CAT and positively correlates with ‘negative affect’ and ‘homesickness’, which suggests that students who miss their old friends are likely to have difficulty adjusting to college and may feel homesick (Paul & Brier, 2001). Other than the CAT (Pennebaker et al., 1990) includes a sub-scale for homesickness, a specific subscale for missing old friends or friendsickness does not exist in other college adjustment scales, but similar to the findings in chapter three, homesickness and social support are emphasized by students through qualitative studies using student interviews (Tognoli, 2003).

#### **5.5.6 *Difficulty navigating new challenges***

This factor contains eight items, all of which are reversed scored. ‘Difficulty navigating new challenges’ explains the new challenges that students may face during the college adjustment period, such as increased independent learning, taking responsibility for academic time management and maintaining

old friendships and is aligned with 'Academic and Interpersonal Skills' and 'Social Cohesion' overarching themes in chapter three. Three items are clearly related to managing friendships during the college adjustment period, these relate to difficulties that students may have when they see their old friends online and feel that they are missing out. The ability to manage these feelings are part of the challenges that are presented to students when they start college or university. 'Difficulty navigating new challenges' is significantly correlated with 'self-management of face to face social difficulties', 'self-reliance from social media' and 'missing old friends' as discussed earlier.

'Difficulty navigating new challenges' has a significant negative relationship with 'managing spare time'. It could be suggested that those who successfully navigate new challenges, do not have difficulty managing their spare time outside of college or university. Furthermore, students who find difficulties in navigating new challenges may have difficulties in managing their spare time. 'Difficulty navigating new challenges' encompasses developing interpersonal and academic skills, these are addressed in the college adjustment literature through subscales such as academic and personal-emotional adjustment in the SACQ (Baker & Siryk, 1989). This factor is significantly correlated to each subscale of the CAT (Pennebaker et al., 1990). The positive relationships with 'negative affect' and 'homesickness' suggest that the more difficulty navigating new challenges then the higher the negative effect and levels of homesickness on college adjustment. Similarly, this factor was negatively correlated with 'positive affect' of the CAT (Pennebaker et al., 1990) which further supports the suggestion that increases in difficulties in navigating

new challenges of college adjustment may negatively impact college adjustment.

### **5.5.7 *Managing spare time***

This factor contains four items relating to difficulties in managing spare time that the student may have outside of college regarding managing relationships with old friends. It is mostly aligned with the overarching theme 'Social Exclusion' from chapter three where participants felt excluded from friend groups due to mismanagement of time.

'Managing spare time' is one of the new facets of college adjustment identified in the thesis thus far. The college adjustment literature does not consider time management to be a specific attribute of college adjustment, however the current findings suggest that the ability to manage spare time relates to all facets of college adjustment. Although the correlations are weak, there is still merit in considering that time management may be a skill that could be taught to undergraduate students during their years of study. The negative relationship with 'missing old friends' and 'difficulty navigating new challenges' suggests that effective time management skills, especially regarding managing friendships and work, may result in lower feelings of missing old friends and furthermore may have lessened difficulties in navigating new college adjustment challenges. The positive relationship with overall college adjustment in relation to the CAT (Pennebaker et al., 1990), suggests that effective time management may contribute towards college adjustment. In addition, effective time management may lessen the feeling of homesickness and negative feelings surrounding college.

### **5.5.8 Limitations and future research**

#### **5.5.8.1 Dataset reduction.**

While efforts were made to recruit participants in both educational institutes in the same way as chapter four, the dataset for the current study was smaller ( $n = 268$ ). In the UK university, the recruitment proved difficult, there were only 27 participants that completed the questionnaire. Over a two day period, active recruitment took place and computer labs were booked for data collection. The questionnaire was also available online but there was no independent uptake on the online study. Participant recruitment in the Irish institute was more straightforward, lecturers and course co-ordinators promoted the study to their class groups. The majority of the data were first year students, there was a broader range of participants attending different courses in the current dataset which may have contributed towards the difference in data patterns between chapter four and the current chapter. Regardless of the sample size or where it is collected, it might be expected that the same pattern of findings would emerge across any given university or college. Therefore, similar results should be found regardless of the elimination of the UK data sample.

Over the course of the two studies (chapter four and chapter five), ethics requirements changed whereby forced responses in online questionnaires were no longer permitted which may have been a confounding factor in the removal of incomplete cases from the dataset. In addition, the limitations in Amos and normality assumptions of a CFA, resulted in removing over 20% of cases that were incomplete from the dataset.

#### **5.5.8.2 Issues with the new scale.**

The PCA in chapter four reduced the number of items from 171 to 76, but a possible issue lies in the large number of items in the pilot scale. College adjustment is multi-dimensional and the researcher was reluctant to dismiss areas that seemed to be of importance to students when they were being interviewed when identifying items to include in the pilot scale in chapter four. Perhaps at that stage of the research, the questions should have been more focussed on the social aspect of college adjustment rather than general college adjustment issues which possibly led to the inclusion of too many items in the scale, and subsequently may have impacted the data for chapters four and five.

One of the limitations of this study was the inaccessibility of the SACQ (Baker & Siryk, 1989). While the CAT (Pennebaker et al., 1990) was considered to be a good alternative because it measures issues that affect college adjustment, had good reliability and was used in previous research to validate new scales, it would be sensible to suggest that future work should consider alternative college adjustment scales to test the robustness of the current findings.

As the current study progressed, it emerged that the scoring for the scale was confusing where 1 = 'strongly agree' and 7 = 'strongly disagree', where the lower score indicated higher adjustment and therefore the factor names were revised to minimise confusion. Further refinement of the new scale could involve a review of how the scale is scored to bring it in-line with other psychometric scales.

### **5.5.8.3 Inadequate model fit.**

Some of the difficulties relating to an inadequate model fit, could be attributed to a number of potential issues. The first identified issue was possible item content similarity where participants may have perceived items to be similar. This was evident in the output from the CFA where the modification indices implied that many parameters should be added due to item similarity. Secondly, there was a possibility that the questions were not properly understood by participants. However, this explanation does not hold much merit due to lack of feedback from the pilot scale with regard to the phrasing of questions that remained in the six component model. Thirdly, there were 76 items in this scale along with 19 questions on the CAT (Pennebaker et al., 1990), it is possible that participants experienced questionnaire fatigue. The fourth possible issue concerns the definitions of certain terms, such as 'college', may have been misunderstood in the UK university where the terms 'college' and 'university' are interchangeable in Ireland but this may not be the case in the UK. It was deemed important to keep the terms of reference used in literature i.e., college adjustment. Though in hindsight, it may have been misunderstood by some. Future studies could consider the universal understanding and definition of the term 'college' in the college adjustment literature.

In addition, the data pattern differences across chapters four and the current chapter, suggests that there are other influencing factors. It is possible that college adjustment could be affected by emotional states and subsequently social media use may be influenced by emotions such as anxiety surrounding making new friends or pending exams (Chen, 2011; Grellhesl & Punyanunt-

Carter, 2012). In which case, social media may be used in a state-dependent way to gratify such needs (Chen, 2011; Katz et al., 1974; Rubin, 2002; Yang & Brown, 2013). If college adjustment is state based, data patterns across studies would be similar, therefore, there is merit in considering that emotional states may influence both college adjustment and social media use.

#### **5.5.9 Conclusion**

In the current study, the student adjustment scale was not based on a previous scale, it was constructed based on the findings from student group interviews (chapter three) and a subsequent PCA (chapter four). The findings of the current study support previous findings that college adjustment is a multi-faceted construct (Baker & Siryk, 1986; Crombag, 1969). In addition, similar previous issues regarding construct validity and inadequate model fit were experienced during the current study (Feldt et al., 2011a; Taylor & Pastor, 2005; Yang & Lee, 2018) which leads to the possibility that college adjustment could be influenced by individual differences, which will be the premise of chapter six.

Furthermore, college adjustment takes place over a period of time when students are settling into a new environment with new sets of challenges. Some students settle and others not at all which may result in attrition (Baker & Siryk, 1984, 1986). Successful or unsuccessful college adjustment is not a fixed trait, it is likely something that can change over time. It is therefore feasible that college adjustment is both transient and fixed. This may be a reason why validation of college adjustment scales fail more often than they succeed, or are simply not attempted. For instance, two separate pieces of research conducting a CFA on the most widely used college adjustment scale, the SACQ (Baker &

Siryk, 1989) failed to fit the data to the four factor model (Feldt et al., 2011a; Taylor & Pastor, 2005).

The differences in data patterns between chapter four and the current chapter could be attributed to a number of factors, one being that individual differences, possibly both state and trait, are at play in college adjustment and may affect the outcome for students. Analysing the effect of a psychological trait such as personality may reveal what type of student needs to feel socially included online to adequately adjust to college. It is possible that college adjustment scales measure a transient state which is a temporary way of feeling at a particular point in time, and therefore perhaps a trait such as personality can predict certain outcomes for the student adjustment scale and its subscales (Rust & Golombok, 2009). It is possible that chapter four and the current chapter, measured a transient state of college adjustment where behaviour is affected by personality and further affected by emotional state. Furthermore, the use of social media could be driven by transient states, where using social media is an instant gratification to satisfy an immediate need such as social or academic support (Katz et al., 1974; Rubin, 2002).

Currently, there exists a gap in literature where the combined areas of personality, college adjustment and social media use is understudied and furthermore, what does exist, presents contradictory findings based on using a mixture of social media and college adjustment measurement scales as discussed in chapter two. Therefore, further research into the effect of personality traits on college adjustment and social media use will be conducted in the next chapter using the student adjustment scale with five factors and 48 items.



## **Chapter 6: Personality and the Student Adjustment Scale**

The work thus far reported in this thesis suggests that college adjustment extends beyond academic challenges. The length of time for adequate college adjustment can vary between students and how well a student adjusts may depend on psychological traits, such as personality (Folkman, 1997; Rajaei et al., 2016). This study will therefore consider the role of personality in college adjustment. In doing so, it will assess whether personality can predict college adjustment using the 50-item International Personality Item Pool (IPIP; Goldberg, 1992, 1999) and the student adjustment scale.

### **6.1 Background**

College adjustment is considered to be a difficult time for students (Credé & Niehorster, 2012) in which they generally employ coping strategies to address any challenges that arise (Pennebaker et al., 1990). Given the multifaceted nature of college adjustment (Baker & Siryk, 1986), and based on the results from chapters four and five, it could be suggested that the relationship between college adjustment and students is complex. It is a state likely to fluctuate due to external influences such as interactions with classmates or friends, assessment grades, academic deadlines or psychological traits. Therefore, analysing the effect of a psychological trait such as personality may reveal what type of student needs to feel socially included online to adequately adjust to college. There is very little literature on this area of research, therefore there is cause for an examination of how individual differences may affect college adjustment and social media use.

### **6.1.1 *College adjustment and psychological states***

There are numerous studies on the effect of psychological states in coping with trauma (Folkman, 1997; Rajaei et al., 2016). If college adjustment is likened to a traumatic experience, psychological state could affect it (Folkman, 1997). Positive psychological states have a significant relationship with problem-focused coping strategies which include seeking support to cope with stress (Rajaei et al., 2016). Folkman (1997) found that the co-existence of positive and negative psychological states is important in understanding how people cope and that positive psychological states do not need to be intense or prolonged for them to be beneficial. Therefore, it is important to acknowledge that students may experience both positive and negative psychological states in managing the multi-facets of college adjustment. These states could be embedded in a person's individual characteristics. Emotional states could fluctuate depending on stressful situations such as exams or deadlines for submission of work, where positive and negative emotions could increase or decrease (Matsushita et al., 2007; Sang et al., 2017). Therefore it is important to acknowledge that students may experience both positive and negative psychological states in managing the multi-facets of college adjustment.

Whilst this study will not consider emotional states, it is important to acknowledge that emotional states may be driven by personality correlates. For example, some research examined transient emotional states and concluded that individual characteristics such as personality traits can affect emotional reactions to perceptions such as differing weather conditions and facial expressions (Qiao-Tasserit et al., 2017; Spasova, 2010). Other studies suggest that interaction between emotional state and learning, affects in mood, but that

there could be other factors at play (Eldar & Niv, 2015). Moreover, college adjustment may be affected by personality traits or by an event that may have affected an emotional state. Individual characteristics likely play a role in how these events are experienced and interpreted and therefore, personality will be examined as a predictor of scores on the student adjustment scale.

### **6.1.2 *Personality, college adjustment and social media***

Numerous studies report the effect of personality on college adjustment in light of coping skills, career indecision and predictors of academic performance (Credé & Niehorster, 2012; Feldt et al., 2011a; McCredie & Kurtz, 2020; Schnuck & Handal, 2011). Research associates personality with social media use and college adjustment but there is limited research on the combination of all three (McCrae & Costa, 1996; Watson & Hubbard, 1995).

For the current study, an examination of personality traits is warranted to explore how individual differences may affect college adjustment issues in relation to social media use using the student adjustment scale that includes a factor for 'self-reliance from social media'. One of the personality models is the Five Factor Model (FFM; McCrae & John, 1992) which defines personality traits in five dimensions: extraversion, agreeableness, conscientiousness, neuroticism and openness to experience. In a review of the available literature on personality and coping style, Watson and Hubbard (1996) considered that the FFM (McCrae & Costa, 1992) is particularly applicable to challenges faced during a life transition and linked measures of adaptational style to personality traits. The following section recaps on some of the main points from chapter two to formulate seven hypotheses that will be examined in this chapter.

### **6.1.2.1 Extraversion.**

In the college adjustment literature, a common finding is that levels of extraversion are associated specifically with positive social college adjustment (Schnuck & Handal, 2011), although as discussed in chapter two, the measurements used for college adjustment and personality are mixed (Bardi & Ryff, 2007; Kilmstra et al., 2018; Kurtz et al., 2012). It is therefore predicted that levels of extraversion will predict levels of 'self-management of face to face social difficulties' (hypothesis one).

Research has shown that personality traits are linked to Facebook use (Amichai-Hamburger & Vinitzky, 2010), where extraverts use social media as a tool to maintain social contacts but not to replace social interactions. It is also related to social support seeking during the transition to college (Ross et al., 2009; Watson & Hubbard, 1996). Therefore levels of extraversion are expected to predict levels of 'self-reliance from social media' (hypothesis two).

### **6.1.2.2 Agreeableness.**

Early findings in social media literature generally found agreeableness to be unrelated to social media use (Amichai-Hamburger & Vinitzky, 2010; Correa et al., 2013; Ross et al., 2009), however in later studies agreeableness positively predicts all forms of social media use, including frequency of use and social interaction (Gil de Zúñiga et al., 2017). Literature is limited on agreeableness and college adjustment, however in one study, it is suggested that agreeableness positively relates to all subscales of the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989). Furthermore, the findings from chapter three suggest that participants in the student group interviews joined social media platforms to become familiar with their

classmates and college. Therefore, it is predicted that levels of agreeableness are expected to predict levels of 'self-reliance from social media' (hypothesis three).

#### **6.1.2.3 Conscientiousness.**

Levels of conscientiousness are related to academic college adjustment as rated by self, peers and parents (Kurtz et al., 2012) and is associated with the academic facet of college adjustment (Nechita et al., 2015; Schnuck & Handal, 2011), where it is significantly positively related to the final grade in a course (Lounsbury et al., 2003). Furthermore, levels of conscientiousness are associated with the number of Facebook friends (Amichai-Hamburger & Vinitzky, 2010). Ross et al. (2009) found that those who are high on conscientiousness may try to ensure that they are socially included online. Therefore, it is predicted that levels of conscientiousness are expected to predict levels of 'self-reliance from social media' (hypothesis four) and levels of conscientiousness are expected to predict levels of 'difficulty navigating new challenges' (hypothesis five).

#### **6.1.2.4 Neuroticism / Emotional stability.**

Neuroticism and emotional stability are highly correlated between the NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992) and the 50-item IPIP (Goldberg, 1999). Neuroticism is consistently the personality trait that is associated with negative college adjustment outcomes in literature, regardless of the range of personality and college adjustment measures (Bardi & Ryff, 2007; Brooks & DuBois, 1995; Kilmstra et al., 2018; Lu, 1994; Okun & Finch, 1998).

In relation to social media and personality literature, results are mixed, Skues et al. (2012) found that neuroticism has no relationship with Facebook use whereas other studies that used a range of personality measurements suggest that levels of neuroticism are associated with time spent on social media (Butt & Phillips, 2008; Correa et al., 2013; Gil de Zúñiga et al., 2017). Therefore, it is predicted that levels of emotional stability are expected to predict levels of 'self-reliance from social media' (hypothesis six).

#### **6.1.2.5 Openness to new experiences / Intellect-imagination.**

This personality trait seems to be largely unrelated to college adjustment, perhaps because the findings from chapter three suggest that undergraduate students are generally coming directly from school environments where new experiences are limited. In relation to literature on college adjustment, Kurtz et al. (2012) found that openness to experience is positively related to academic adjustment, using the SACQ (Baker & Siryk, 1989), from peer and parent ratings but not self-ratings. Considering that one of the subscales identified in chapter five was 'difficulty navigating new challenges' which includes academic challenges, it is likely that those who are high in intellect/imagination may be able to navigate the challenges faced during college adjustment, therefore it is predicted that levels of intellect/imagination are expected to predict levels of 'difficulty navigating new challenges' (hypothesis seven).

## **6.2 Current Study**

The aims of this study are thus to investigate if personality traits predict scores of the five factors of the student adjustment scale. It will do so by having participants complete both the 50-item IPIP (Goldberg, 1992, 1999) and the student adjustment scale. Results will be discussed in light of literature in the

area, future directions of research and how this work offers a unique contribution to knowledge.

### **6.3 Method**

#### **6.3.1 Participants**

The participants for this study stemmed from the participant group from chapter five who completed the 50-item IPIP (Goldberg, 1992, 1999) at the same time as the 76 item new scale. There were 268 participants from an Irish institute.

The mean age of participants was 19.8 (SD = 3.1), with minimum age of 17 and maximum of 56. The gender breakdown was as follows where 151 (56.3%) of all participants were female, 106 (39.6%) identified as male and the remaining 11 (4%) identified as transgender male, gender variant/non-conforming, not listed and prefer not to answer. Of the 268 participants, 211 (78.7%) were in first year, 47 (17.5%) in second year, 1 (0.4%) in third year and 9 (3.4%) in fourth year. In total 13 (4.9%) participants were mature students and 255 (95.1%) were not. In total, 235 (88%) participants were Irish, the remaining 33 (12%) participants were from 17 different countries. The participants attended a range of different courses, of the 268 participants, 65 were from business courses (24%), 67 were from psychology courses (25%), 99 were from courses associated with film and creative technologies (37%), 35 were from courses associated with humanities (13%) and the remaining two were unspecified.

In total, 195 (72.8%) reported to be living with parents or caretaker, 31 (11.6%) were in private accommodation, and the remaining 42 (15.6%) were in a mix of own home, university accommodation, living with other family members

and other forms of accommodation. Of the 268, 145 (54.1%) participants responded that they attended college straight from school and 196 (73.1%) participants held secondary education as their highest qualification on entering the course. In total, 182 (67.9%) participants reported that they received their first choice of courses in college and 239 (89.2%) reported that English was their first language. Given that they were all studying at either an Irish institute or a UK university, it was assumed that their level of English comprehension was sufficient for completion of this study.

### **6.3.2 Design**

This study used a linear regression design with the 50-item IPIP (Goldberg, 1992, 1999) providing the predictor factors of extraversion, agreeableness, conscientiousness, emotional stability, intellect/imagination and the newly developed college adjustment scale providing the outcome factors of the five factors of the new scale: self-management of face to face social difficulties, self-reliance from social media, missing old friends, difficulty navigating new challenges and managing spare time.

### **6.3.3 Materials**

#### **6.3.3.1 The 50-item IPIP.**

As discussed in chapter two, Goldberg's 50-item IPIP (1992, 1999) is an alternative to conventional practice regarding personality assessment (Appendix N). According to John et al. (2008) in their examination of convergent validity across the Big Five Inventory (BFI; John & Scrivastava, 1999), the NEO-FFI and the Trait Descriptive Adjectives (TDA; Goldberg, 1992), which is the most commonly used measure consisting of single adjectives, Goldberg (1992) found that the BFI and TDA showed the strongest overall convergence (mean  $r = .80$ ).



The 50-item IPIP (Goldberg, 1992, 1999) was designed to have less items than the broad-bandwidth instruments and five traits of personality: 1) Extraversion; 2) Agreeableness; 3) Conscientiousness; 4) Emotional Stability; 5) Intellect/Imagination. It has good correlation with the NEO-FFI where conscientiousness, extraversion and emotional stability scales of the IPIP were highly correlated with those of the NEO-FFI ( $r = 0.6$  to  $-0.83$ ,  $p < 0.01$ ) but agreeableness and openness showed a weaker correlation ( $r = 0.49$  and  $0.59$  respectively,  $p < 0.01$ ) (Goldberg, 1999). Examining the correlations between the 50-item IPIP and the Eysenck Personality Questionnaire (EPQ-R; Eysenck & Eysenck, 1985), extraversion and emotional stability/neuroticism were high at  $0.85$  and  $-0.84$  respectively (Gow et al., 2005).

Considering the length of the student adjustment scale, a short personality assessment instrument was deemed suitable for this study. According to Wielkiewicz (2015), the 50-item IPIP is suitable for use when a short measure of personality is required. Their findings for a five factor solution were comparable with previous studies that indicated the same (Cooper et al., 2010; Donnellan et al., 2006). All scales were reliable with Wielkiewicz (2015) showing less reliability than previous studies but still within an acceptable range of Cronbach's  $\alpha$  .63 to .80. Other research with smaller sample sizes also demonstrated that the 50-Item IPIP (Goldberg, 1992, 1999) is a valid instrument for assessing personality (Constantinescu & Constantinescu, 2016).

The 50-item IPIP scale (Goldberg, 1992) is a 5-point Likert scale 1 = 'very inaccurate' to 5 = 'very accurate' (see Appendix N). The IPIP demonstrates acceptable levels of internal reliability for the current study where  $n = 268$ . The IPIP has five factors: extraversion (Cronbach's  $\alpha = .875$ );

agreeableness (Cronbach's  $\alpha = .755$ ); conscientiousness (Cronbach's  $\alpha = .761$ ); emotional stability (Cronbach's  $\alpha = .864$ ) and Intellect/imagination (Cronbach's  $\alpha = .758$ ).

### **6.3.3.2 The student adjustment scale.**

The initial development of the student adjustment scale was conducted in chapter four and a further refinement of the scale was conducted in chapter five resulting in a five factor 48 item scale. The purpose of the student adjustment scale, is to measure contemporary issues in college adjustment that includes the use of social media, for undergraduate students. In chapter five, validity tests were conducted on the scale and the final five factor model demonstrated convergent validity with the College Adjustment Test (CAT; Pennebaker et al., 1990). It demonstrates good internal reliability in the current study ( $n = 268$ ), the subscales are broken down as follows: 'self-management of face to face social difficulties' contains all items relating to face to face social interactions in a new college environment (Cronbach's  $\alpha = .925$ ); 'self-reliance from social media' contains items that relate to bridging new friendships online and maintaining old friendships online (Cronbach's  $\alpha = .839$ ); 'missing old friends' includes all items relating to difficulties surrounding old friendships (Cronbach's  $\alpha = .741$ ); 'difficulty navigating new challenges' includes all items relating to academic and social challenges (Cronbach's  $\alpha = .793$ ); 'managing spare time' includes all items relating to time outside of college activities (Cronbach's  $\alpha = .77$ ). The student adjustment scale is a 7-point Likert scale where 1 = 'strongly agree' to 7 = 'strongly disagree'.

#### **6.3.4 Procedure**

Ethical approval was granted in the Irish institute and the UK university (Appendix L). In the UK university, ethical guidelines published by the British Psychological Society (The British Psychological Society, 2018) regarding setting forced responses on questions was changed between execution of studies two (chapter four) and three (chapter five). Participants were required to give their consent before progressing with the study, in addition all participants were required to be at least 18 years old. All questions except for consent and age did not require a forced response. The stated date to allow participants to request removal of their data changed but is not reflected in the ethics documentation. The researcher was present at all data collection sessions and the participants were verbally informed of a new date during the sessions.

The study information was available once the participant clicked on the study link. There were seven consent items that had to be selected before the participant could proceed. If the participant chose not to select all seven, then the questionnaire ended and they were brought to a 'thank you' page. There was logic in the questionnaire to ensure full consent. Participation in the study was optional. Both information and consent forms were provided to participants as part of the online questionnaire, such as information on withdrawing their data from the study, confidentiality and anonymity. After completing the questionnaire, participants were provided with online debriefing information and contact details for the researcher should they have any questions.

The online questionnaire was created using Qualtrics. Active recruitment took place in an Irish institute and a UK university. The questionnaire was long and students did not independently complete it online, therefore permission to

collect data in-class was sought through the relevant heads of department, course co-ordinators and individual lecturers. The participants used either laboratory computers or their own mobile devices to complete the questionnaire. In the UK university, the questionnaire was advertised online to students studying psychology on the participant pool system. The researcher stayed for the duration of data collection to address any questions. Students in the UK university were awarded two course credits for attending the data collection session. The average completion time for the questionnaire was 26 minutes.

### **6.3.5 Analysis**

The study was designed to examine the effect of personality on college adjustment by conducting multiple regression analysis using the student adjustment scale and the 50-item IPIP (Goldberg, 1992), using SPSS version 26.

## **6.5 Results**

### **6.5.1 Multiple regression data suitability**

Multiple linear regression was conducted to assess the ability of the five subscales of the 50-item IPIP (extraversion, agreeableness, conscientiousness, emotional stability and intellect/imagination) to predict the scores of the five factors of the new scale.

Preliminary analysis was carried out to ensure that there was no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity. Mahalanobis distance did not exceed the critical value of the 20.52 (Tabachnik & Fidell, 2014), therefore there were no noteworthy multivariate outliers. There was no missing data in this dataset ( $n = 268$ ). All cases with missing data were

removed as part of the data screening process in chapter five. There was no evidence of multicollinearity, for all cases, no correlation was higher than .7 and all Tolerance values were  $< 1$  and all VIF values were  $< 10$  with the highest tolerance value of .92 and the highest VIF of 1.199.

Regression assumptions are concerned with the testing of residuals where they should not be correlated (Tabachnik & Fidell, 2014). The Durbin-Watson (1951) test examines this assumption and relies on a value between one and three for the assumption to be met. All regression models did not violate this assumption with the highest value at 2.16.

To test for assumptions of homoscedasticity and normality, scatter and probability plots were examined for each regression model. The scatter plots mapped standard residuals and standardized predicted values and all five regression models were rectangular in shape and therefore the assumption of homoscedasticity was not violated. There were some occurrences of cases falling outside of the  $-.3$  and  $.3$  range, the cases were identified but Cook's Distance did not exceed .058, which indicated that removal of any outliers would have no influence on the model and that all cases should remain (Tabachnik & Fidell, 2014).

#### **6.5.1.1 Data transformation.**

To explore the normality assumption for each model, the probability plots of residuals versus predicted residuals were examined. Four of the five models deviated slightly from the straight line of the probability plot of regression which suggested a violation of the assumption of normality of residuals. Each of the independent variables were tested for normality and transformed using either

the log function or the reflect and log for the kurtotic data shape (see Table 6.1) (Tabachnik & Fidell, 2014).

Table 6.1

*Normality test results for the independent variables*

	Kolmogorov-Smirnov		Shapiro-Wilk	
	Untransformed	Transformed	Untransformed	Transformed
Agreeableness	$p < .001$	$p < .001$	$p < .001$	$p < .001$
Conscientiousness	$p = .026$	$p = .003$	$p = .031$	$p = .002$
Emotional Stability	$p = .005$	$p < .001$	$p = .003$	$p < .001$
Intellect/Imagination	$p = .010$	$p < .001$	$p = .068$	$p < .001$

For each of the four problematic models (where the dependent variables were ‘self-management of face to face social difficulties’, ‘self-reliance from social media’, ‘missing old friends’ and ‘managing spare time’), the transformed variables were used in the linear regression models and following that, the standardised and unstandardized residuals were tested for normality.

The standard and unstandardised residuals for the regression model with ‘self-management of face to face social difficulties’ as the dependent variable resulted in normal distribution but the results from the linear multiple regression returned the same predictors with little difference. The regression model was significant  $F(5,262) = 27.81$ ,  $p < .001$  where  $R = .59$  indicates a strong correlation between ‘self-management of face to face social difficulties’ and personality, and  $R^2 = .347$  and therefore accounted for 34.7% of the overall variance. Three of the five subscales of the IPIP predicted the ‘self-management of face to face social difficulties’ score ( $M = 85.42$ ,  $SD = 20.05$ ) with extraversion recording the highest beta value: extraversion ( $\beta = .49$ ,  $t(267) = 8.94$ ,  $p < .001$ ), conscientiousness ( $\beta = .19$ ,  $t(267) = 2.27$ ,  $p = .02$ ) and emotional stability ( $\beta = .24$ ,  $t(267) = 4.57$ ,  $p < .001$ ). In addition, Mahalanobis distance exceeded the critical value of 20.52 using the transformed dependent

variables, indicating the presence of multivariate outliers. For the remaining three regression models, the transformation of the predictor variables did not make any difference to the distribution of data and the residual values still evidenced nonnormal distribution. Therefore, based on multivariate data issues and little difference to the remaining three models, it was decided to return to the original regression models and leave the data untransformed but to continue while considering generalisability issues.

### **6.5.2 Predictive analysis of personality on the new scale**

All five predictive variables: extraversion ( $M = 30.92$ ,  $SD = 7.99$ ), agreeableness ( $M = 40.68$ ,  $SD = 5.39$ ), conscientiousness ( $M = 31.65$ ,  $SD = 6.42$ ), emotional stability ( $M = 25.45$ ,  $SD = 8.26$ ) and intellect/imagination ( $M = 36.88$ ,  $SD = 5.93$ ) were entered into the regression models below.

#### **6.5.2.1 Self-management of face-to-face social difficulties.**

The regression model that tested hypothesis one where it was predicted that extraversion would predict the subscale 'self-management of face-to-face social difficulties', was significant  $F(5,262) = 27.66$ ,  $p < .001$  where  $R = .588$  indicates a strong relationship between 'self-management of face to face social difficulties' and personality, and  $R^2 = .346$  and accounted for 34.6% of the overall variance. Three of the five subscales of the 50-item IPIP significantly predicted the 'self-management of face to face social difficulties' score ( $M = 85.42$ ,  $SD = 20.05$ ) with extraversion recording the highest beta value: extraversion ( $\beta = .49$ ,  $t(267) = 8.98$ ,  $p < .001$ ), conscientiousness ( $\beta = .12$ ,  $t(267) = 2.27$ ,  $p = .02$ ) and emotional stability ( $\beta = .24$ ,  $t(267) = 4.62$ ,  $p < .001$ ), see Table 6.2. Therefore, hypothesis one was supported where extraversion recorded the highest beta value in predicting self-management of face to face

social difficulties. To determine the direction of the relationship between it and extraversion, conscientiousness and emotional stability, a Pearson correlation indicated that there was a significant positive relationship between 'self-management of face to face social difficulties', extraversion ( $r(268) = .52, p < .001$ ) and emotional stability ( $r(268) = .33, p < .001$ ). There was no significant relationship for conscientiousness ( $r(268) = .06, p = .297$ ), see Table 6.3.

Two of the five subscales of the 50-item IPIP did not significantly predict 'self-management of face-to-face social difficulties': agreeableness ( $\beta = .05, t(267) = 1.05, p = .296$ ) and intellect/imagination ( $\beta = -.02, t(267) = -.43, p = .66$ ).

#### **6.5.2.2 Self-reliance from social media.**

The regression model that tests hypothesis two, three, four and seven where extraversion, agreeableness, conscientiousness and emotional stability are expected to predict the subscale 'self-reliance from social media', was significant,  $F(5,262) = 7.94, p < .001$  where  $R = .36$  indicates a poor relationship between 'self-reliance from social media' and personality, and  $R^2 = .13$ . Two of the five subscales of the IPIP significantly predicted 'self-reliance from social media' ( $M = 38.31, SD = 10.88$ ) with agreeableness recording the highest beta value: agreeableness ( $\beta = -.22, t(267) = -3.65, p < .001$ ), and emotional stability ( $\beta = .21, t(267) = 3.44, p = .001$ ). Therefore, hypothesis three and seven were supported where agreeableness and emotional stability were significant predictors of 'self-reliance from social media'. To determine the direction of the relationship between 'self-reliance from social media' and agreeableness and emotional stability, a Pearson correlation indicated that there was a significant positive relationship between 'self-reliance from social media' and emotional



stability ( $r(268) = .26, p < .001$ ) and a significant negative relationship between 'self-management of face to face social difficulties' and agreeableness ( $r(268) = -.27, p < .001$ ), see Table 6.3.

Three of the 50-item IPIP subscales did not significantly predict the new scale: extraversion ( $\beta = .00, t(267) = .001, p = .99$ ), conscientiousness ( $\beta = .11, t(267) = 1.86, p = .06$ ) and intellect/imagination ( $\beta = -.04, t(267) = -.69, p = .49$ ). Therefore, hypothesis four and two were not supported where conscientiousness and extraversion were not significant predictors of self-reliance from social media.

#### **6.5.2.3 Missing old friends.**

The regression model that tests the effect of personality traits on the student adjustment scale was significant where the model accounted for 7.1% of the variance,  $F(5,262) = 4.03, p = .002$  where  $R = .27$  which indicates a poor relationship between 'missing old friends' and personality, and  $R^2 = .07$ . One of the five subscales of the IPIP significantly predicted missing old friends ( $M = 20.08, SD = 4.58$ ): emotional stability ( $\beta = -.18, t(267) = -2.89, p = .004$ ). To determine the direction of the relationship between missing old friends and emotional stability, a correlation indicated that there was a significant negative association between 'missing old friends' and emotional stability ( $r(268) = -.196, p = .001$ ), see Table 6.3. The negative relationship suggests that lower levels of emotional stability predicts an increase in 'missing old friends', see Table 6.2.

The remaining four factors of the 50-item IPIP (Goldberg, 1992, 1999) did not significantly predict 'missing old friends': extraversion ( $\beta = .07, t(267) = 1.05, p = .29$ ), agreeableness ( $\beta = .09, t(267) = 1.49, p = .14$ ),

conscientiousness ( $\beta = -.10$ ,  $t(267) = -1.68$ ,  $p = .09$ ) and intellect/imagination ( $\beta = .05$ ,  $t(267) = .79$ ,  $p = .43$ ).

#### **6.5.2.4 Difficulty navigating new challenges.**

The regression model that tested hypotheses five and seven where that conscientiousness and intellect/imagination were expected to predict difficulty navigating new challenges. The model accounted for 27.5% of the variance and was significant,  $F(5,262) = 19.92$ ,  $p < .001$  where  $R = .525$  which indicates a moderate relationship between navigation of new challenges and personality, and  $R^2 = .275$ . Three of the five subscales of the IPIP significantly predicted 'difficulty navigating new challenges' score ( $M = 30.01$ ,  $SD = 9.15$ ) with conscientiousness recording the highest beta value: conscientiousness ( $\beta = -.35$ ,  $t(267) = -6.41$ ,  $p < .001$ ), emotional stability ( $\beta = -.28$ ,  $t(267) = -5.13$ ,  $p < .001$ ) and intellect/imagination ( $\beta = -.199$ ,  $t(267) = -3.50$ ,  $p < .001$ ), see Table 6.2. Therefore, hypothesis five and seven were supported where conscientiousness and intellect/imagination predict 'difficulty navigating new challenges'. To determine the direction of the relationship between 'difficulty navigating new challenges' and conscientiousness, emotional stability and intellect/imagination, a correlation indicated that there was a significant negative association between 'difficulty navigating new challenges' and conscientiousness ( $r(268) = -.42$ ,  $p < .001$ ), emotional stability ( $r(268) = -.28$ ,  $p < .001$ ) and intellect/imagination ( $r(268) = -.23$ ,  $p < .001$ ). The negative relationships suggest that lower conscientiousness, emotional stability and lower intellect/imagination predicts difficulty navigating new challenges, see Table 6.2.

Two of the 50-item IPIP factors did not significantly predict the difficulty navigating new challenges: extraversion ( $\beta = .08$ ,  $t(267) = 1.37$ ,  $p = .17$ ) and agreeableness ( $\beta = -.01$ ,  $t(267) = -.23$ ,  $p = .81$ ).

#### **6.5.2.5 Managing spare time.**

The regression model that tested the effect of personality traits on the new scale model accounted for 14% of the variance,  $F(5,262) = 8.52$ ,  $p < .001$  where  $R = .37$  which indicates a poor relationship between 'managing spare time' and personality, and  $R^2 = .14$ . One of the five subscales of the IPIP significantly predicted the managing spare time score ( $M = 12.74$ ,  $SD = 5.18$ ): emotional stability ( $\beta = .34$ ,  $t(267) = 5.71$ ,  $p < .001$ ), see Table 6.2. A Pearson correlation indicated that there was a significant positive association between managing spare time and emotional stability ( $r(268) = .36$ ,  $p < .001$ ), see Table 6.3. Four of the five personality factors did not significantly predict managing spare time: extraversion ( $\beta = -.04$ ,  $t(267) = -.69$ ,  $p = .49$ ), agreeableness ( $\beta = -.10$ ,  $t(267) = -1.68$ ,  $p = .09$ ), conscientiousness ( $\beta = .01$ ,  $t(267) = .17$ ,  $p = .86$ ) and intellect/imagination ( $\beta = .03$ ,  $t(267) = .57$ ,  $p = .57$ ).

Table 6.2

*Coefficients associated with regression model predicting the new scale*

	Self-management of f2f social difficulties			Self-reliance from social media			Missing old friends			Difficulty navigating new challenges			Managing spare time		
	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$	<i>B</i>	<i>SE</i>	$\beta$
Constant	15.18	10.95		46.42	6.85		19.08	2.98		63.33	5.26		10.69	3.24	
Extraversion	1.23	0.14	.49**	0.00	0.09	0.00	0.04	0.04	0.07	0.09	0.07	0.08	-0.03	0.04	-0.04
Agreeableness	0.20	0.196	0.05	-0.45	0.12	-0.22**	0.08	0.05	0.09	-0.02	0.09	-0.01	-0.098	0.06	-0.10
Conscientiousness	0.37	0.16	0.12*	0.19	0.10	0.11	-0.07	0.04	-0.10	-0.50	0.08	-.35**	0.008	0.05	0.01
Emotional Stability	0.59	0.13	.24**	0.27	0.08	0.21**	-0.1	0.03	-0.18*	-0.31	0.06	-0.28**	0.22	0.04	0.34**
Intellect/Imagination	-0.08	0.18	-0.02	-0.08	0.11	-0.04	0.04	0.05	0.05	-0.31	0.09	-0.199**	0.03	0.05	0.03
	Adj R <sup>2</sup> = 0.33			Adj R <sup>2</sup> = 0.11			Adj R <sup>2</sup> = 0.05			Adj R <sup>2</sup> = 0.26			Adj R <sup>2</sup> = 0.12		

\*  $p < 0.05$ . \*\*  $p < 0.01$ .

Table 6.3

*50-Item IPIP and overall new scale descriptive statistics and intercorrelations*

No.	Factor	Mean (SD)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)	Self-management of face to face social difficulties	85.42 (20.05)	1									
(2)	Self-reliance from social media	38.31 (10.88)	-.001	1								
(3)	Missing old friends	20.08 (4.58)	-.08	-.24**	1							
(4)	Difficulty navigating new challenges	30.01 (9.15)	-.26**	-.30**	.28**	1						
(5)	Managing spare time	12.74 (5.18)	.13*	.24**	-.26**	-.24**	1					
(6)	Extraversion	30.92 (7.99)	.52**	-.03	.08	.02	.01	1				
(7)	Agreeableness	40.68 (5.39)	.08	-.27**	.15*	.02	-.17**	.17**	1			
(8)	Conscientiousness	31.65 (6.42)	.06	.12*	-.12	-.42**	.05	-.13*	-.01	1		
(9)	Emotional stability	25.45 (8.26)	.33**	.26**	-.196**	-.28**	.36**	.18**	-.196**	.67	1	
(10)	Intellect/Imagination	36.88 (5.93)	.13*	-.07	.07	-.23**	-.01	.26**	.20**	.18**	.03	1

\*  $p < 0.05$ . \*\*  $p < 0.01$ .

#### **6.5.4 Summary of findings**

Overall, the analyses indicated that hypotheses one, three, five, six and seven were supported. Levels of extraversion have thus been shown to predict 'self-management of face to face social difficulties' with a moderate correlation of  $r = .52$ . Levels of agreeableness have been shown to predict levels of 'self-reliance from social media', 'missing old friends' and 'managing spare time' with weak correlations  $r = -.27$ ,  $r = .15$   $r = -.17$  respectively. Levels of conscientiousness have been shown to predict levels of 'self-reliance from social media' and 'difficulty navigating new challenges' with the highest correlation with 'difficulty navigating new challenges' where  $r = -.42$ . Levels of emotional stability predicts all subscales of the new scale where 'managing spare time' was the highest  $r = .36$ . Levels of Intellect/Imagination have been shown to predict 'self-management of face to face social difficulties' and 'difficulty navigating new challenges' with weak correlations, 'difficulty navigating new challenges' had the highest correlation where  $r = .23$ . However, hypotheses two and four were not supported. Therefore, the current data do not evidence that levels of conscientiousness and extraversion predicts levels of 'self-reliance from social media'.

#### **6.5 Discussion**

All five personality traits (extraversion, agreeableness, conscientiousness, emotional stability and intellect/imagination) were shown to be predictors of the five factors of the new scale ('self-management of face to face social difficulties', 'self-reliance from social media', 'missing old friends', 'difficulty navigating new challenges' and 'managing spare time') through a

series of multiple linear regression analyses. Each of the personality traits will now be discussed in more detail.

### **6.5.1 Extraversion**

The findings from this study suggest that levels of extraversion predict levels of 'self-management of face to face social difficulties' which supports hypothesis one. The subscale for 'self-management of face to face social difficulties' is concerned with feelings of loneliness when starting college and difficulties in getting to know classmates. This supports previous research where extraverts tend to seek out social support during a life transition and that they tend to show high levels of social adjustment (Bardi & Ryff, 2007; Kurtz et al., 2012; Schnuck & Handal, 2011; Watson & Hubbard, 1996). The positive relationship suggests that the more extravert students are then the better the 'self-management of face to face social difficulties'.

In contrast to previous research, hypothesis two is not supported in that extraversion does not predict 'self-reliance from social media' (Amichai-Hamburger & Vinitzky, 2010; Sulaiman et al., 2018). This factor is concerned with using social media to meet the need to belong in a class or college (Baumeister & Leary, 1995). Research in the area suggests that extraverts use social media as a social extension rather than a replacement for social interactions (Amichai-Hamburger & Vinitzky, 2010) and therefore may explain why they may be more concerned with face to face interactions than online interactions. That said, it is worth noting that a multitude of factors could affect the contrast in results. For example, social media platforms other than Facebook (such as WhatsApp, Snapchat and Instagram) are used by participants in the current study whereas previous literature tends to focus on

the use of specific differing social media platforms and measurements, such as Facebook (Amichai-Hamburger & Vinitzky, 2010; Ellison et al., 2007; Ellison et al., 2014; Ross et al., 2009; Utz et al., 2015). Moreover, the pattern of results from the literature is mixed, with extraversion shown to predict social media use in some studies (Amichai-Hamburger & Vinitzky, 2010), whereas other research did not find any association with social media use (Ross et al., 2009; Skues et al., 2012). There is therefore merit in considering that the results of the current study could be different due to the differences in the scales used to measure social media use. The disparate findings might also be a sign of moving times in social media, where developments in how students use different platforms might be reflected by the different findings or if emotional states influence social media use. Future work should explore this by using scales that have hitherto provided different results on the same sample, and by simulating an environment that may trigger an emotional state to ascertain if social media use is influenced by states.

In the current study, extraversion predicted 'self-management of face to face social difficulties'. Therefore, it could be suggested that those higher in extraversion are possibly more concerned with establishing face to face social interactions with classmates and maintaining face to face relationships with old friends than with online interactions. This supports previous literature where extraverts may view online interactions as an extension of friendship but does not replace social interactions (Amichai-Hamburger & Vinitzky, 2010).

### **6.5.2 Agreeableness**

Hypothesis three is supported where the negative significant relationship between agreeableness and 'self-reliance from social media' suggests that



higher levels of agreeableness relate to lower self-reliance from social media, suggesting that students rely on social media whilst adjusting to college (Gil de Zúñiga et al., 2017). The subscale for 'self-reliance from social media' is concerned with students' reliance on social media to maintain old and bridge new friendships online. The characteristic of agreeable individuals is to join groups (McCrae & Costa, 2008). Therefore, the relationship between agreeableness and self-reliance from social media suggests that the higher the agreeableness, the more time and effort will be spent online to communicate with old and new friends. It could be suggested that higher reliance on social media could possibly lead to the detriment of some facets of college adjustment (Whelan et al., 2020). Individuals high in agreeableness tend to act in a cooperative manner with others and this could imply that if others are using social media, they will too.

The findings from chapter three suggest that students use a multitude of social media platforms ranging from Facebook for general information about the course and classmates, to establishing smaller friend groups on WhatsApp, possibly in an attempt to gain social support. However, considering the plethora of social media sites, potential multiple social identities (Baumeister & Leary, 1995; Serpe, 1987; Tajfel & Turner, 1979; Thomas et al., 2017), and managing multiple group norms (McKenna & Green, 2002; Reicher et al., 1995; Spears & Lea, 1992; Spears et al., 1990). In future research, it may be worthwhile to examine if agreeable individuals engage more with multiple online groups and the effect on other facets of college adjustment.

The weak relationships between agreeableness and 'missing old friends' and 'managing spare time', support previous literature (Schnuck & Handal,

2011). Therefore, it is feasible to suggest that there may be a relationship between 'self-reliance from social media' and the negative impact on other aspects of college adjustment such as maintaining old friendships and time management. Similar to Whelan et al. (2020), a future area of research could be to consider why students establish themselves across multiple social media sites and if this impacts on current facets of college adjustment using the new scale.

### **6.5.3 *Conscientiousness***

In the current study, conscientiousness predicted scores on the factors for 'missing old friends' and 'difficulty navigating new challenges'. All relationships are negative which suggests that higher levels of conscientiousness related to less missing old friends and less difficulties in navigating new challenges they experience and therefore supports the characteristics of conscientious individuals such as hardworking and organised (McCrae & Costa, 2008).

The findings did not, however, support hypothesis four. There was no significant relationship between conscientiousness and 'self-reliance from social media'. This suggests that conscientious students do not necessarily place importance on using social media while adjusting to college. Although conscientiousness does not predict this factor, there is a significant positive relationship between the two, which suggests that the higher the levels of conscientiousness then an increase in self-reliance from social media. Conscientiousness typically is associated with academic adjustment (Lounsbury et al., 2003; Schnuck & Handal, 2011), therefore it could be considered that

conscientious individuals are organised and tend not to rely on social media for college adjustment.

Research identified that levels of conscientiousness are associated with numbers of Facebook friends and using social media for news, social interactions and social inclusion (Amichai-Hamburger & Vinitzky, 2010; Gil de Zúñiga et al., 2017; Ross et al., 2009). Conscientiousness is also attributed to being organised and striving for long-term goals (McCrae & Costa, 1999, 2008), where students' long-term goals are likely to be related to course completion. Therefore, social media may not be considered a necessary part of a long-term goal for the conscientious student, which could be a reason why conscientiousness does not predict 'self-reliance from social media'. Future research could consider the point at which students tend to join social media platforms in their academic endeavours, and how they continue to use social media throughout their years of study in college. This could be conducted as a longitudinal study to assess how social media use is established and how it changes throughout the duration of a course for students.

The existing relationships in the new scale, as discussed in chapter five, suggest that 'self-reliance from social media' during college adjustment is negatively correlated with 'difficulty navigating new challenges' and 'managing spare time', therefore there is merit in considering that those high in conscientiousness would not place importance on something that is not directly related to achieving a long-term college or university goal. A more longitudinal assessment would be required to assess this notion across the entire student experience at university.

In addition, the measurement for social media use was different in all studies in previous literature and in the current study, where social media measurement scales were developed specifically for the study at hand (Amichai-Hamburger & Vinitzky, 2010; Gil de Zúñiga et al., 2017; Ross et al., 2009), this could be considered a reason why the results are mixed. Also, in previous literature, the NEO-PI-R (Costa & McCrae, 1992) is used to measure personality whereas the 50-item IPIP (Goldberg, 1982, 1999) is used in the current study, therefore differences in results between the studies may be attributed to differences in scales that are used in research. Future work could consider using the same scales on different samples from different universities and colleges in order to establish consistency in results or to determine why there are differences. However, considering the differences in data patterns in previous literature, it is feasible to suggest that social media use could be influenced by states and triggered by academic stressors such as pending exams or assignment submission. Future work could examine the understudied area of the influence of emotional state on social media use and college adjustment.

Therefore, the findings of the current study support previous literature in the area of personality and college adjustment. Hypothesis five is supported where conscientiousness predicts 'difficulty navigating new challenges' which includes academic challenges such as independent learning (Kurtz et al., 2012; McCredie & Kurtz, 2020). College adjustment and personality literature reported using a range of college adjustment measurements from grade point average (GPA) scores to using the complete SACQ (Baker & Siryk, 1989) where results are similar showing that conscientiousness is associated with social and

academic adjustment (Kilmstra et al., 2018; Nechita et al., 2015; Schnuck & Handal, 2011; Vedel, 2014).

#### **6.5.4 *Emotional stability***

One very important finding from the current study is that emotional stability significantly predicts all of the new scale subscales, which supports previous literature (Brooks & DuBois, 1995; Credé & Niehorster, 2012; Kilmstra et al., 2018; Lidy & Kahn, 2006; Lounsbury et al., 2004; Lu, 1994; Okun & Finch, 1998; Watson & Hubbard, 1996). This finding suggests that students need to have established a level of emotional stability in order to be able to adjust to college.

The findings from the current study suggest that high emotional stability relates to high 'self-management of face to face social difficulties', higher 'self-reliance from social media' and more success in 'managing spare time'. The negative association with 'missing old friends' and 'difficulty navigating new challenges' suggests that the higher an individual is in emotional stability, the less they miss old friends and the less difficulty navigating new challenges. This is in contrast to Schnuck and Handal (2011), where emotional stability only predicts personal-emotional adjustment on the SACQ (Baker & Siryk, 1989). However, the structure of the SACQ differs to the structure of the student adjustment scale, where current college adjustment issues such as social media use and skills such as time management and the ability to navigate new challenges are part of the construct. It is feasible to consider that the new scale may have a more accurate perspective of current college adjustment issues for the contemporary student.

Hypothesis six is also supported in that emotional stability significantly predicts 'self-reliance from social media'. The findings from the current study thus suggest that those who score high on emotional stability are more likely to generally adjust to college in a positive way. College adjustment and social media research tends to be specific to social media platforms, where neuroticism is associated with time spent on social media such as Facebook and Twitter (Butt & Phillips, 2008; Correa et al., 2013; Gil de Zúñiga et al., 2017; Hughes et al., 2012) and where Facebook is used for escapism (Orchard et al., 2014). The student adjustment scale considers a broad definition of social media where items are not platform specific.

#### **6.5.5 *Intellect/Imagination***

Intellect/Imagination correlates with the openness subscale of the NEO-FFI (McCrae & Costa, 1992), whilst it has historically never correlated with college adjustment (Schnuck & Handal, 2011; Watson & Hubbard, 1996), the results of this study suggest that intellect/imagination predicts 'difficulty navigating new challenges' that includes independent learning and managing old friends which supports hypothesis seven.

One of the reasons for the differences in findings between the current study and previous literature could be that individuals high on openness to experience tend to be action focussed regarding a need for variety and change (McCrae & Costa, 1999, 2008). Therefore, negative association with 'difficulty navigating new challenges' suggests that the higher in intellect/imagination then the less difficulty navigating new challenges, possibly because of their tendency to try new experiences (McCrae & Costa, 1999, 2008). In the new scale, the factor for difficulty navigating new challenges is a combination of elements of

both the social and academic subscales of the SACQ (Baker & Siryk, 1989) and furthermore supports previous findings where different college adjustment and personality scales are used (Kurtz et al., 2012; Lounsbury et al., 2003). For example, the current findings support a study that used the Personal Style Inventory (PSI; Lounsbury et al., 2003) to measure personality and GPA scores to measure academic college adjustment. Openness is positively associated with the final grade in a psychology course (Lounsbury et al., 2003). Furthermore, in a different study, using the NEO-PI-R (Costa & McCrae, 1992), self, parent and peer ratings of personality and college adjustment (Baker & Siryk, 1989) were measured where openness is positively associated with academic adjustment from parent and peer ratings, but not self-ratings (Kurtz et al., 2012). Both studies used different personality and college adjustment measurements but had similar conclusions.

#### **6.5.6 Limitations and future research**

A number of limitations and suggestions for future research have already been outlined. In addition to these, the findings from the current study suggest that levels of college adjustment differ from student to student depending on personality traits. Literature on college adjustment has mostly focussed on the influences of social, academic, personal-emotional and institute attachment (Baker & Siryk, 1989) and does not consider active processes at the root of college adjustment where personality may affect emotional reactions to triggers such as assignment or exam deadlines (Qiao-Tasserit et al., 2017; Sang et al., 2017; Spasova, 2010). Further exploration into the effect of transient states on college adjustment is recommended to ascertain how college adjustment is perceived by students. This could be examined using a longitudinal study to

determine if positive or negative emotional states affect college adjustment over a period of time. In line with this suggestion, Folkman (1997) found that personality traits could affect feelings of despair up to 15 months after experiencing a traumatic event. Therefore, a retest of the same student group after one year may give an insight into how well students in the current sample adjusted. That said, there are many factors that might impact college adjustment, such as prior mental health issues (Anton & Reid, 1991; Khawaja & Brydon, 2006; Kleinmuntz, 1960), sense of identity (Iyer et al., 2009; Serpe, 1987; Stryker & Burke, 2000; Tajfel & Turner, 1979; Thomas et al., 2017) and belonging (Baumeister & Leary, 1995). It may also be sensible to assess how these factors impact emotional states, which in turn might have an effect on college adjustment.

Moreover, considering the longer term impacts of personality on life transitions (Folkman, 1997), work may need to be carried out to explore college adjustment itself from the perspective of state and trait impacts. Two constructs of adjustment could be considered whereby students possess a baseline of adjusting that generally directs behaviour. However, the varying demands of college adjustment as identified in the thesis thus far, such as online and face to face social pressures, academic challenges and time management, may provide fluctuation in that behaviour which may be considered a state level of adjustment. Therefore, there is merit in considering that college adjustment may also be a transient state that affects student behaviour, in much the same way that anxiety can be state or trait based (Spielberger et al., 1983). A possible way to explore this is to distribute the new scale, along with a personality scale such as the 50-item IPIP (Goldberg, 1992, 1999) to a group of students prior to



an event that may cause enhanced emotional states such as an exam and then again afterwards to measure if there are differences between the datasets. A study such as this may shed light on the effect of transient emotional states on college adjustment.

One of the limitations of this study includes the inaccessibility of the five-factor model of personality (McCrae & Costa, 1996). The 50-item IPIP (Goldberg, 1992, 1999) was considered to be a good alternative because a short personality measurement was required for this study. It was shown to be reliable and has strong correlations with the NEO-FFI. However, literature in the area of personality, college adjustment and social media use, reports a mix of personality measures and at times results differed in studies. There is merit in considering that the findings of the current study may be unique to the 50-item IPIP and therefore it would be sensible to suggest that future work should consider alternative personality scales to test the robustness of the current findings.

The dataset for the current study consisted of undergraduate students from an Irish institute due to violations of data assumptions as discussed in chapter five. As a result, this study is limited to data from one institution when the original aim for the thesis was to analyse across institutions and examine cultural differences in college adjustment, social media use and personality. The college adjustment literature tends to focus on a single educational institute and future work could examine if college adjustment issues are universal or specific to a culture or a college (Baker & Siryk, 1986; Feldt et al., 2011a; Gray et al., 2013; Pennebaker et al., 1990; Taylor & Pastor, 2005). Considering data normality issues encountered in chapter five, careful consideration of target

groups would need to be ascertained in order to reduce the risk of violations of assumptions such as multivariate normality (Tabachnik & Fidell, 2014).

Bearing all of this in mind, it would not be sensible to make general assertions from these findings to other institutions. However, if college adjustment is indeed a trait rather than state effect, it might be expected that the same pattern of findings would emerge across any given university or college. Future research could test this assumption by assessing trait versus state adjustment to offer further clarification on whether this pattern of results was in fact unique to the participant sample tested.

#### **6.5.7 Conclusion**

The current study measured the effect of personality on the student adjustment scale that was developed in chapters four and five of this thesis. Results evidence that personality is significantly associated with current college adjustment issues and furthermore that personality traits predict factors of the new scale. A key finding is that emotional stability predicts all factors of the new scale.

The factor 'self-reliance from social media' contains items pertinent to social media use in college adjustment, the current study reveals that 'self-reliance from social media' is predicted by agreeableness and emotional stability. These associations support previous literature on the area of social media use and personality but further evidences that social media use is an integral part of the college adjustment construct.

Findings from this study were similar to previous literature that used a mix of social media use measurements. One of the issues with social media use scale development is that a vast array of measurement tools are currently

available, some with validation concerns (Sigerson & Cheng, 2018). In addition, as discussed in chapter two, the college adjustment literature tends to use social media scales that are developed for specific studies, perhaps in an effort to keep up with the rapid growth and consumption of social media (Statista, 2020). As a result, there are many scales that measure different aspects of specific social media platforms and its use in college adjustment. However, literature specifically in the area of social media use, personality and college adjustment is limited. The results from research are mixed possibly due to the range of scales that are used across studies, not just for social media measurement but there is some evidence that personality instruments were developed specifically for studies as were college adjustment scales. The question of whether college adjustment is a state or trait is relevant to the mixed findings in literature.

Previous literature does not tend to combine all three areas to examine the role of social media use and personality in college adjustment and subsequently this area is somewhat understudied. This research strove to address this gap in literature and formed a unique contribution to knowledge in the area of personality, college adjustment and the use of social media by examining the effect of personality traits on current college adjustment issues by using the student adjustment scale.

## Chapter 7: Final Discussion and Summary

The aim of the current thesis was to develop and validate an instrument to assess the role of social media on current college adjustment issues. Four studies were undertaken and subsequently resulted in the student adjustment scale comprising of five factors and 48 items.

One of the main findings of the study is that college adjustment is not a single construct, the student adjustment scale is best considered as multi-faceted with five facets of college adjustment. Additionally, the new scale includes two new factors not previously included in the college adjustment literature: 'self-reliance from social media' and 'managing spare time'. The main findings from the new scale are: 1) there is no relationship between 'self-management of face to face social difficulties' and 'self-reliance from social media'; 2) 'self-reliance from social media' is positively associated with college adjustment; 3) 'missing old friends' may result in an increase in time and effort spent on social media which may detract from other aspects of college adjustment, such as 'difficulty navigating new challenges' and 'managing spare time'; 4) 'difficulty navigating new challenges', including managing independent learning, is a key factor of college adjustment and is associated with all factors of the new scale. Furthermore, an examination of the effect of personality on college adjustment and social media use reveals that undergraduate students need to have a baseline of emotional stability to adequately adjust to college.

Throughout the study, uses and gratifications theory (U&G; Katz et al., 1974) is pertinent to students' use of social media whilst adjusting to college. Transient states may have a role in college adjustment and social media use,

where social media may be used in a state-dependent way and furthermore college adjustment itself could be considered as both a state and trait.

The student adjustment scale will now be considered in relation to the main findings, followed by a discussion on the potential roles of emotional states on college adjustment and social media. Potential future areas of research will be highlighted and discussed, while practical recommendations regarding students' social media use will be presented for consideration by faculty and student services. Finally, considerations of the current COVID-19 pandemic will be addressed.

### **7.1 The student adjustment scale**

The student adjustment scale addresses current issues including social media use, the inclusion of which is a unique contribution to the college adjustment literature. Furthermore it is a step towards developing a uniform approach that measures social media use specifically for college adjustment.

In previous literature, college adjustment tends to be treated as a single construct yet multi-faceted, where various aspects of college adjustment form an overall construct (Baker & Siryk, 1989; Pennebaker et al., 1990). In the current thesis, considering the intercorrelations between the subscales of the new scale, it was not feasible to produce an overall adjustment score. Therefore, college adjustment needs to be considered as multi-faceted where students may have difficulty with some aspects and not with others.

The final version of the student adjustment scale includes current issues of college adjustment experienced and reported by students and comprises of the following factors: 'self-management of face to face social difficulties', 'self-

reliance from social media', 'missing old friends', 'difficulty navigating new challenges' and 'managing spare time'.

Two factors 'self-reliance from social media' and 'managing spare time' consider new facets of college adjustment that have not yet been considered in existing college adjustment literature. The items in the remaining three factors of the student adjustment scale, reflect current issues experienced by students and therefore, all five factors uniquely contribute to the body of knowledge on college adjustment. Each factor was previously discussed in detail and will now be discussed specifically in relation to the main findings and future areas of research.

#### ***7.1.1 'Self-management of face to face social difficulties' and 'self-reliance from social media'***

The results suggest that there is no relationship between 'self-management of face to face social interactions' and 'self-reliance from social media'. This contradicts previous research, where it was suggested that social media use may alleviate social anxiety and that students use online platforms in tandem with face to face interactions (Garbutt, 2009; Gray et al., 2013; Ledbetter, 2017; McEwan, 2013; McKenna & Green, 2002). However considering U&G theory, there is merit in suggesting that social media may be effective at maintaining existing friendships (Ellison et al., 2007; Ellison et al., 2014) but may not gratify a need in relation to establishing new friendships (Katz et al., 1974; Wang et al., 2012; Yang & Brown, 2013), where previous research suggests that social media is an extension of a friendship (Ledbetter, 2017). These results suggest that social media use is not related to face to face social difficulties and furthermore, extraversion is not associated to 'self-reliance

from social media' but is a predictor of 'self-management of face to face social difficulties' and emotional stability predicts both factors. Therefore, future research could consider if face to face social difficulties is a motive to use social media during college adjustment.

### **7.1.2 Self-reliance from social media and college adjustment**

The negative association with 'negative affect' of the College Adjustment Test (CAT; Pennebaker et al., 1990) supports findings from previous literature, where it is found that social media is considered to be a distraction from time that could be spent on academic endeavours (Baishya & Maheshwari, 2020; Ghana et al., 2015; Janković et al., 2016; Yang & Lee, 2018), and high levels of social media use are associated with lower levels of college adjustment factors (LaRose et al., 2011; Raacke & Bonds-Raacke, 2015; Wohn & LaRose, 2014; Yang & Lee, 2018). Furthermore, the positive association with the overall college adjustment from the CAT (Pennebaker et al., 1990) could be attributed to a number of determining factors that will be discussed in the following paragraphs.

One possibility is that students tend to maintain old friendships and be socially mobile in developing new friendships in college, therefore they do not simply move groups as social mobility suggests (Iyer et al., 2009; Serpe, 1987; Tajfel & Turner, 1979; Thomas et al., 2017). Social media removes technical limitations and allows them to add new friend groups, which may lead to preoccupations with friends, and therefore lead to lower levels of college adjustment (Cao et al., 2018; Paul & Brier, 2001; Whelan et al., 2020). In addition, if human needs are not met, this may prompt students to use social media to satisfy these needs and, for example, to remain in contact with old

friends where social adjustment may be negatively affected (Katz et al., 1974; Paul & Brier, 2001). The current data does not shed light on this but future research may consider measuring time spent (both online and face to face) interacting with and seeking information on old friends, by examining its effect on social difficulties with college friends, using the student adjustment scale.

Another possibility is that self-managing multiple online social identities, memberships of multiple online groups and group norms, may lead to cognitive overload (Cao et al., 2018; Dunbar, 2018; Mayer & Moreno, 2003; Whelan et al., 2020). Also, depending on the established online group norms, and considering the SIDE model, students may act differently according to the saliency of a social identity within groups. This was evidenced in chapter three, where students found that the class online group on WhatsApp or Facebook, was used to complain about the course and yet students would simultaneously behave more positively on broadcast social media platforms such as Instagram (McKenna & Green, 2002; Spears, 2017; Spears & Lea, 1992; Turkle, 1999).

Social media is a part of students' everyday life and may be used differently at different points over the academic year, for example to meet needs such as maintaining an old network of friends or alleviating short term needs such as anxiety around pending academic deadlines (Baumeister & Leary, 1995; Chen, 2011; Grellhesl & Punyanunt-Carter, 2012; Katz et al., 1974). This highlights a possible area of future research where student behaviour on social media could be examined with regard to social interaction, at the start of first year and then again, at the end of the same academic year, to determine if their social media behaviour changes throughout the year. It would be advisable to consider that there could be other factors at play, which may influence effective



self-management of face to face social difficulties, such as individual differences.

### **7.1.3 *Missing old friends***

Considering the findings from this study and U&G (Katz et al., 1974; Rubin, 2002) where 'self-reliance from social media' is negatively associated with 'missing old friends', students may turn to social media to gratify the need to start establishing new networks in college or attempt to maintain old friendships, when they miss their old friends (Baumeister & Leary, 1995; Ellison et al., 2007; Paul & Brier, 2001). However as previously mentioned, research suggests that social media may not satisfy this need (Wang et al., 2012; Yang & Brown, 2013) and therefore, the time and effort put into managing friendships online may result in anxiety for students which may detract from other aspects of college adjustment (Du et al., 2018; Hoffman, Baumeister et al., 2012; Hoffman, Vohs et al., 2012). Therefore, the significant relationships with 'difficulty navigating new challenges' and 'managing spare time' are reasonable. It suggests that the more students miss their old friends then the more difficulty they may have with navigating new challenges and managing spare time possibly due to the time and effort invested in maintaining contact with old friends.

### **7.1.4 *Difficulty navigating new challenges***

The negative association with 'self-reliance from social media' implies that students may use social media to satisfy a need, for example, with regard to an academic issue and post a question in a class group chat, and subsequently become distracted from academic endeavours (Baishya & Maheshwari, 2020; Ghana et al., 2015; Janković et al., 2016). The ability to

navigate new challenges is further associated with 'missing old friends' where students may become preoccupied with old friendships and find that this negatively effects their adjustment to college (Paul & Brier, 2001). Furthermore, using the CAT (Pennebaker et al., 1990), 'difficulty navigating new challenges' negatively affects overall college adjustment for students.

#### **7.1.5 *Managing spare time***

This factor is a unique contribution to knowledge insofar as other college adjustment scales have not included this facet, whereby effective management of time may result in better adjustment (Baker & Siryk, 1989; Pennebaker et al., 1990). Positive relationships with the CAT (Pennebaker et al., 1990) suggest that time management for students is particularly important in adjusting to college especially in self-managing distractions when it comes to friendships or social media (Baishya & Maheshwari, 2020; Junco, 2010; Junco & Cotton, 2010; Yeboah & Ewur, 2014). There is a positive weak relationship between 'managing spare time' and 'self-reliance from social media' which supports literature where time spent on social media, in order to establish social adjustment in college, may result in depletions in energy and therefore result in procrastination which is an inefficient use of time (Baumeister, 2007). However the strength of the correlation must be considered in future studies.

Considering that the current thesis has shed light on this new aspect of college adjustment, continuing this examination of effective time management could be an area of future research, where students are examined on their time management of social media, academic work and deadlines as well as managing spare time to see friends and family. While literature in the area suggests that academic work can be sacrificed for time spent online (Janković

et al., 2016), there is a current gap in literature that explores the impact of time management on college adjustment and furthermore, that explores the effect of personality, emotional states and college stressors on time management.

## **7.2 Personality**

The current study uniquely contributes to the field of personality, college adjustment and social media use. The results of chapter six indicate that personality traits guide student behaviour around college adjustment and social media use. In particular a key finding for the study is that emotional stability predicts all factors of the new scale, which suggests that undergraduate students must have a baseline of emotional stability in order to adequately adjust to college.

‘Self-reliance from social media’ is predicted by agreeableness and emotional stability. The current study posits that an over reliance on social media may be to the detriment of time management and navigating new challenges presented by college adjustment. Agreeable individuals will use social media but will have difficulty managing spare time, further studies could explore this to determine a relationship between these variables, and could possibly explain if social media use impacts on time management, specifically for personality traits during college adjustment. In contradiction to previous research, levels of ‘self-reliance from social media’ are positively associated with levels of conscientiousness, however conscientiousness does not predict this factor (Ross et al., 2009). Therefore, it could be suggested that conscientious individuals are more focussed on navigating the challenges that includes academic and independent learning than on using social media (Lounsbury et al., 2003; Schnuck & Handal, 2011; Vedel, 2014).

The results of this study suggest that intellect/imagination predicts 'difficulty navigating new challenges' which includes independent learning. The negative relationship supports previous findings, where openness is positively associated with the academic subscale of the Student Adaptation to College Questionnaire (Baker & Siryk, 1989; Kurtz et al., 2012). However considering the items in this factor, the current results suggest that intellect/imagination is associated with independent learning and interpersonal skills.

### **7.3 State or trait**

The differences in results between chapters four and five and the subsequent failure of a model fit, suggest that emotional states may influence college adjustment behaviour, although the data does not directly evidence this. However, if college adjustment was trait based, there would be little difference across data samples. Therefore, considering the data pattern differences, two constructs of adjustment could be considered whereby students possess a baseline of adjusting that generally directs behaviour. Varying demands of college adjustment, such as social pressures, academic challenges and time management, may result in variation in student behaviour that may be considered a state level of adjustment (Qiao-Tasserit et al., 2017; Sang et al., 2017; Spasova, 2010). Consequently, it is worth considering that college adjustment may also be a transient state that affects student behaviour, in much the same way that anxiety can be state or trait based (Spielberger et al., 1983). Furthermore, students adapt social media and instant messaging to gratify needs such as social and academic support, with peers and old friends, possibly in attempts to alleviate stressors such as exams or social pressures (Chen, 2011; Wang et al., 2012; Yang & Brown, 2013). For example, social

connection is a common factor identified in U&G research (Chen, 2011; Grellhesl & Punyanunt-Carter, 2012; Joinson, 2008; Katz et al., 1974; Orchard et al., 2014; Raacke & Bonds-Raacke, 2008; Wang et al., 2012; Yang & Brown, 2013), in the case of college adjustment, students may adapt social media or instant messaging to their advantage to satisfy this need.

In addition, it is feasible to suggest that validation concerns regarding college adjustment scales may be related to states triggered by college adjustment issues, rather than traits. This may explain why data patterns were not consistent across chapter four and chapter five, and furthermore why scale validation has been problematic (Baker & Siryk, 1989; Feldt et al., 2011a; Taylor & Pastor, 2005).

In addition, from the findings of chapter three, it was apparent that college adjustment takes place over a period of time (Baker & Siryk, 1984; Manago et al., 2011; Taylor & Pastor, 2005). While the social side of college adjustment is considered important at the outset, possibly academic and time management skills begin to gain momentum as a student progresses through academic years of study and their focus begins to shift to other priorities such as academic achievement. Establishing a new social network could be paramount in first year, as was evidenced in chapter three, but possibly not as important in the following years. Therefore, college adjustment itself could be considered a transient state whereby students move through different aspects at different times over the duration of the course with different priorities. Future research could consider the differences in college adjustment issues throughout years of study and how students use social media to cope with these changes.

## **7.4 Limitations and future areas of study**

In addition to some potential research that was outlined in this chapter thus far, the findings from this thesis prompt possibilities of future directions of college adjustment research.

### **7.4.1 Limitations of data samples**

It is important to note that all participants were middle class students attending one of two educational institutions. Consequently, it is worth considering that the generalisability of the current results may be reduced. However, this study is a starting point for further development of the student adjustment scale and therefore it would be advisable to repeat the study with a different student cohort from different educational institutions to determine any significant differences between student groups and to examine the robustness of the scale in other academic contexts. In addition, future studies should strive to attain a more complete representation of the student groups than was attained in this study so that possible bias may be reduced. For example, it is likely that students who were already adjusted, emotionally stable or agreeable may have been more likely to participate in this study. It is also possible that those who did not adjust adequately to college did not participate due to the fact that they may not have been in attendance or had already left the course. Additionally, in the current dataset, there were similarities across institutions where the majority of students lived at home, this resulted in fewer participants reporting levels of homesickness. A more representative sample of students may have resulted in a different outcome, although friendsickness seemed to be common with regard to preoccupations to maintain online and face to face friendships with old friends from school and home (Paul & Brier, 2001).

Future studies could examine other variables such as socio-economic status, sojourner, minority groups and first generation student to further validate the new scale. These studies may also consider recruiting student groups in other universities where there may be differences in relation to university prestige. In addition, time limitations for data collection needs to be considered when recruiting, the key times for data collection seem to be periods of lower academic pressure.

#### **7.4.2 *Testing the robustness of findings***

There were limitations in this study insofar as there is merit in considering that the findings may be unique to the CAT (Pennebaker et al., 1990) or the 50-item IPIP (Goldberg, 1992, 1999). Future scale validation could consider the use of the SACQ (Baker & Siryk, 1989) or alternative personality scales to test the robustness of the current findings. Furthermore, to establish consistency in results and to identify reasons for differences in data, future work could consider using the same personality and college adjustment scales on different samples from different universities and colleges.

#### **7.4.3 *Scale design***

The definition of the term 'college' may have been misinterpreted in the UK university where the term 'college' is not interchangeable with 'university'. It was deemed important to keep the terms of reference used in literature i.e. college adjustment but in hindsight, it may have been misunderstood by UK participants. Future studies could consider the universal understanding and definition of the term 'college' in the college adjustment literature.

The scoring for the new scale was confusing where 1 = 'strongly agree' and 7 = 'strongly disagree', where the lower score indicated higher adjustment

and therefore the factor names were revised to minimise confusion. Further refinement of the new scale could involve a review of the scale scores to bring it in-line with other psychometric scales.

#### **7.4.4 *Social media use during college***

Considering the findings from chapter three regarding peer pressure placed on undergraduate students to use social media to socially adjust to college, it would be insightful to explore the concept of managing multiple social identities across multiple social media platforms. This is a possible area of future research to further validate and test the student adjustment scale. An approach to a study such as this, may be to measure interactions of students on active social media accounts (for example broadcast messaging), active online groups (such as WhatsApp, Discord etc.), the type of simultaneous interactions, how students felt about college before the interactions and how they felt afterwards, by using the student adjustment scale. This may provide insight into how simultaneous social media interactions may impact college adjustment.

#### **7.4.5 *Examination of state and trait***

In addition to suggestions for longitudinal future research in chapters five and six, another possible way to explore state and trait in future studies, is to distribute the student adjustment scale, along with a personality instrument to a group of students, prior to an event that may cause enhanced emotional states such as an exam. The scales should be distributed again afterwards to measure if there are pattern differences in the data. The timeframe to test-retest needs to be within weeks with the same participants, where too short a timeframe may result in participants remembering their answers and too long may result in answers changing due to other influencing factors such as forgetting the level of



stress felt before the academic deadline (Tsang et al., 2017). A study such as this may shed light on the effect of transient emotional states on college adjustment. Inconsistency of results may show differences where the instrument measures a state rather than trait, in which case a high correlation between the datasets would not be expected (Pallant, 2013). Additionally, personality traits would be examined to assess if they remained the same by showing high test-retest correlations. If this is the case then the student adjustment scale would be shown as measuring a transient state that may be influenced by issues in college or external to college.

#### **7.4.6 Individual differences**

Whilst the findings of this thesis suggest that personality plays a role in student adjustment, it is possible that individual differences may also be influential. The construct of self-concept and self-schemas are beyond the realms of this thesis (Gecas, 1982; Higgins, 1987), although, these are areas that could be examined in future studies with regard to theories such as self-discrepancy theory (Higgins, 1987) and self-regulation (Higgins et al., 1994). Considering that self-regulation can be influenced by immediate context (Higgins et al., 1994), a study such as this could investigate if students' social media use increases or decreases at certain times of the academic year. For example, times during the academic year could be highlighted when students depend more on social media and whether self-regulation influences difficulties in navigating new challenges or time management.

Another future area of study may be to consider the facets of the student adjustment scale in light of individual differences. For example, whilst self-efficacy is situation specific, it could be examined in relation to the five facets of

the student adjustment scale. An examination at the start of first year using a scale such as the short form of the General Self Efficacy Scale (GSE-6; Romppel et al., 2013) or the College Self Efficacy Instrument (CSEI; Solberg et al., 1993) and the student adjustment scale, may shed light on whether self-efficacy influences the use of social media and furthermore, if those who are high in self-efficacy navigate the new challenges of college successfully. Bearing in mind that self-efficacy levels are likely to change according to a given situation, it would be advisable to measure self-efficacy around a specific college event, for example when students start college, or when they begin to focus on an academic challenge. The findings may shed light on the use of social media during college adjustment to gratify needs in order to obtain an end goal. Additionally levels of state self-esteem may fluctuate in accordance with situation specific influences such as receiving marks from an exam or assignment. The influence of self-esteem on student adjustment could be measured using a scale such as Rosenberg's self-esteem scale (Rosenberg, 1965), although it is important to note that participants' answers may be influenced by a desire to portray themselves in a more positive light. To determine if social media use or perceptions of managing new challenges change after students receive exam grades, self-esteem could be measured at intervals, for example before and after exam results are issued. A regression analysis would reveal if self-esteem predicts 'self-reliance from social media' or 'difficulty navigating new challenges'.

#### **7.4.7 Cross cultural study**

In chapter five, the UK data was removed and therefore, it was not possible to conduct a cross-cultural analysis of the data as was originally

planned. However, the college adjustment literature tends to report on one university or college and usually one cohort of students particular to a course (Baker & Siryk, 1984, 1986; O'Donnell et al., 2018) with the exception of two other pieces of research (Feldt et al., 2011a; Taylor & Pastor, 2005) that recruited students in specific years of study rather than by course. A future area of research may be to consider if the facets of college adjustment, as identified in the current thesis, are the same across cultures or if there are other facets that have not yet been identified. In the current thesis, two new facets were identified 'self-reliance from social media' and 'managing spare time', it would be advisable to consider other cultures to further validate the student adjustment scale.

#### ***7.4.8 Development of social media platforms***

Since starting this thesis, new social media platforms were adopted for use by students such as TikTok and Discord which were not mentioned in chapter three, because they were not widely used at that time. TikTok is exponentially increasing in active membership with 689 million users as of July 2020 (Statista, 2020). Discord was launched in 2015, initially to compete with Skype, Slack and Microsoft Teams and is currently primarily targeted at gamers but has moved into mainstream markets, the number of active users has quadrupled since 2018 and currently boasts over 300 million (Brown, 2020). The impact of COVID-19 on the gaming market has resulted in an increase in new players (Needleman, 2020) and there could be merit in proposing that this may affect gaming social media platforms such as Discord, Twitch and YouTube, however there is limited academic research in this area. Future research could take this into consideration in reviewing how and why various

social media gaming platforms are being used by students at various points during their study, and if this benefits their academic adjustment to college, this may involve a longitudinal study.

Based on the findings from chapter three, students are not loyal to one social media platform, they tend to choose multiple platforms for varying reasons such as peer influence or pressure (Ellison et al., 2007), self-presentation (Blachnio et al., 2016; Seidman, 2013; Yang & Brown, 2016) and features that are afforded by the platform such as chat, live streaming and so on (Brown, 2020). A point of observation from the student group interviews is that for students, online friendships exist regardless of the choice of social media. The platform itself could be construed as a vehicle that facilitates the establishment and expansion of social circles, maintenance of friendships and allows information seeking without physical boundaries (Ellison et al., 2007; Ellison et al., 2014; Gray et al., 2013; McKenna & Green, 2002; Yang & Lee, 2018). Subsequently, a key point to consider for future research is that psychological research is lagging behind the rapid development of social media platforms and adoption by users. Perhaps the rate of development of social media scales reflects this effort to maintain pace with technological developments and this could explain the rapid development and sheer quantity of psychological social media measurement scales. In turn, this could explain the range of validation issues that plague the development and validity of these scales (Sigerson & Cheng, 2018). This thesis endeavoured to address these issues by developing a college adjustment scale that incorporates social media use through using a selection of multivariate statistical techniques to validate the scale.

#### **7.4.9 Practical recommendations**

This thesis has thus far identified current college adjustment issues that are prevalent for undergraduate students which highlight the importance of social, academic and interpersonal adjustment and time management.

The social aspect of college adjustment seems paramount and therefore time and effort is invested in social interactions. However, the findings from the current thesis suggest that in an effort to satisfy social needs, social media is increasingly used to meet the needs that it creates, by facilitating multiple social media accounts and multiple groups within each account (Chen, 2011; Katz et al., 1974; Rubin, 2002). In addition, the results from chapter six suggest that students need a baseline of emotional stability in order to adjust to college in a positive way. Therefore individual needs should be taken into consideration during module and induction design by faculty and student experience teams.

One of the unique contributions of this work is the identification of time management as a potential issue, where difficulties in meeting academic and personal challenges can have a negative impact on college adjustment. Therefore, faculty and student experience teams in colleges and universities need to consider that students tend to have multiple simultaneous stressors. It is important to recognise that these are not just the traditional stressors of finance, accommodation, travel and academic challenges but in addition, they have the added pressures of being online with peers and old friends. Whilst students undertake college with a lot of digital and social media experience, it would be neglectful to assume that they can manage this experience effectively in new life transitions. Therefore, it would appear that faculty or student experience teams could be more involved in helping students manage their

online lives with regard to education around balancing social media use, time management and interpersonal skills.

#### **7.4.10 COVID-19**

College adjustment issues arising due to the current global pandemic, COVID-19, were not included in this study. All of the data collection for this thesis was conducted before the global pandemic was declared by the World Health Organisation in early 2020 (World Health Organization, 2020).

Given that the practice of teaching has been modified to suit social distancing and remote learning, students may feel differently about using social media in college adjustment, where most activities seem to be online with minimum face to face contact with peers and lecturers. While literature in this area is currently lacking with regard to college adjustment, there is a growing body of literature on how social media is used for information dissemination and for academic purposes (Dutta, 2020). It is important to acknowledge that all facets of college adjustment may be affected by the current global pandemic although literature in this area is not yet available.

Literature surrounding the effect of using social media for academic purposes suggests that the use of WhatsApp, YouTube and video conferencing software such as Zoom, Skype and Webex are used for online teaching, whereas students tend to use Google Hangouts to converse with each other (Dutta, 2020). During the COVID-19 pandemic, it may be a case that visual anonymity has changed within student online groups. Whilst previous literature reported that students tend to use social media to extend friendships (Yang & Brown, 2013), it may be a case that their use of social media has changed due to the remote nature of teaching and learning. For the most part, in the current

pandemic, students do not have opportunities to socialise face to face and may therefore perceive some level of anonymity while communicating with those whom they have not yet met face to face. Growing concerns of the psychological consequences of the pandemic suggests that individuals who perceive themselves to be anonymous are more likely to disclose issues of stress online (Zhang et al., 2021), this area of research in the current pandemic is understudied in relation to student stress and college adjustment. However, other research suggests that social media platforms that facilitate anonymous postings encourage honest communication (Bayne et al., 2019), although the student community or group identity may have influenced the behaviour in the group (Spears, 2017). Considering the SIDE model, anonymous individuals do not always act on behalf of themselves, their behaviour may be influenced by the saliency of the group identity (Spears, 2017), therefore the effect of anonymity on college adjustment could be examined in light of the student adjustment scale, to assess if anonymity or group identity influences students use of social media to navigate the challenges of college.

The COVID-19 pandemic highlights digital poverty in society, and there are issues for some students who may not have access to digital resources, in order to attend online lectures or complete coursework (Kundu & Bej, 2021). These issues are pertinent to college adjustment and could possibly lead to attrition, furthermore they may affect the number of applications to college and university courses. In addition, current students are required to interact online with peers and faculty, which could mean that the use of social media has increased. Although information in this area is currently lacking in research, one

study suggests that students were not ready to move online so suddenly but consider it to be a temporary measure (Kundu & Bej, 2021).

An area of future research could be to examine the impact of changes ensued as a result of the COVID-19 pandemic, on students use of social media in college adjustment and to explore a possible expansion of the role of social media and instant messaging. In addition, considering the traumatic nature of the COVID-19 pandemic, a further study should account for the effect of personality traits and transient emotional states on college adjustment.

## **7.5 Reflection**

The current thesis began as an exploration into the role of social media in college adjustment for undergraduate students, with expectations that social media would play a significant role in adjusting to college, especially in relation to social college adjustment. However, the end result encompasses the different directions that were taken throughout this research journey.

In hindsight, the pilot scale was unwieldy as a result of carrying all five over-arching themes into the items for the pilot scale. This posed problems during the principal components analysis (PCA) that resulted in a large scale with 76 items and 6 components. While proof reading the thesis on the 24<sup>th</sup> February 2021, and specifically reviewing the PCA in chapter four, on reflection, it occurred to me that decisions surrounding the selection of a six component model were based on my experience and knowledge at the time. In retrospect, after two years of multivariate statistical analysis practice, a nine component model may have been taken forward into chapter five instead of the six component model.



An unexpected turn of events in the thesis was the difference in data patterns across chapters four and five. While attempts were made throughout this study to adhere to scale development and validation guidelines (Rust & Golombok, 2009; Sigerson & Cheng, 2018), the results were similar to previous validation tests conducted on existing college adjustment scales where the model did not fit the data. The subsequent confirmatory factor analysis (CFA) resulted in an ill-fitting model possibly due to the complexity of the scale. However, this outcome should have been expected where it appears that college adjustment itself is so complex due to its multi-faceted nature and potential influencing factors. This led to a new area of investigation whereby individual differences were explored with significant results. The suspicion arose that there are other factors influencing both college adjustment and social media use for undergraduate students where social media may be used in a state-dependent way to satisfy college adjustment issues (Katz et al., 1974). The current data does not evidence the influence of transient emotional states, but one of the outcomes of this thesis is that it has opened the research area up to the possibility that transient emotional states impact college adjustment and subsequently social media use. The gradual change of direction of this thesis reflects the ambivalent emotions towards college, where students may simultaneously feel positive and negative. Whilst the results were somewhat unanticipated, there are opportunities to further explore facets of college adjustment in relation to social media use and transient emotional states.

## **7.6 Conclusion**

The current research offers an insight into current college adjustment issues for undergraduate students. The student adjustment scale was

developed based on current and recent experiences of college adjustment and convergent testing was conducted with an established scale. Furthermore, the findings support that college adjustment is not a single construct and cannot be treated as such. Instead it is better treated as a multi-faceted construct where students may score highly in one facet and lower in another.

Social media use was found to be an integral part of college adjustment behaviour. This work is a step towards a uniform approach in examining social media use during college adjustment. It addressed validation concerns noted in literature regarding scale development for both college adjustment and social media measurements. Similar issues were found in previous college adjustment literature which posits the likelihood that college adjustment is not a fixed trait, it is likely something that can change over time, be affected by individual differences or by emotional transient states. Furthermore social media and instant messaging may be used by students in a state-dependent way where social media use is paramount in meeting human needs such as the need to belong or establishing social identities, either instantaneously or over a longer period of time. Therefore there is merit in considering that social media use and college adjustment may be driven by emotional states which could explain the differences in the data patterns across studies.

This study sheds light on current college adjustment experiences and posits that U&G theory is prevalent in students' social media use where it is adapted to meet needs on an ongoing basis throughout their college experience, such that social media behaviour can be state-dependent (Chen, 2011; Katz et al., 1974; Rubin, 2002; Wang et al., 2012; Yang & Brown, 2013).

The student adjustment scale presents a current account of issues that are considered important to students that may have enhanced or clouded their overall experience. It is important to note that students will continue to use social media and instant messaging platforms to adjust socially, academically and interpersonally to college, there is no sign of social media use slowing down (Statista, 2020). Bearing in mind that individual differences play a key role in college adjustment and social media use, college adjustment itself should not be considered as a “one size fits all”. Therefore, it is imperative that students are guided by faculty or student experience teams, both on an individual and group basis, on the potential impacts of social media use on college adjustment in relation to navigating and managing new challenges.

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## Appendix A

### Chapter three: Ethics approval documentation

#### A.1 IADT Institute research ethics committee statement of ethical approval

Title of project: An Exploration of the Role of Private and Public Online Friendships in College Adjustment and Persistence in College.	
Name of researcher:	Audrey Stenson
Name of supervisor(s):	c/o University of Wolverhampton

This project has been considered using agreed IADT procedures and is now approved.

Signed \_\_\_\_\_ Print

Name: Dr Elaine Sisson Date: 7 October 2016

*(Chair, IADT Institute Research Ethics Committee)*

#### Notes

- 1) Research proposals can receive only provisional approval from the Institute Research Ethics Committee in the absence of approval from any agency where you intend to recruit participants.

- 2) Where your application for ethical approval is rejected, you or your supervisor will be informed. The grounds for refusal will be outlined and will have to be addressed in your re-submission.
- 3) Approved proposals will be retained in IADT for 5 years after the research has been completed.



## A.2 University of Wolverhampton ethical approval



Date 27th July 2016

Audrey Stenson (Alison Attrill) FEHW University of Wolverhampton

Dear Audrey Stenson (Alison Attrill)

**Re: An Exploration of the Role of Private and Public Online Friendships in College Adjustment and Persistence in College submitted to The Faculty of Education, Health and Wellbeing Ethics Panel (Health Professions, Psychology, Social Work & Social Care)**

The Faculty Ethics Panel (Health Professions, Psychology, Social Work & Social Care) has considered and reviewed your submission.

On review your Research Proposal was passed and the Panel believes that the ethical issues inherent in your study have been adequately considered and addressed. Therefore the Panel is giving you full ethical approval for your study **(Code 1 - Approved)**. We would like to wish you every success with the project.

Yours sincerely

*H Paniagua*

Dr. H. Paniagua PhD, MSc, BSc (Hons) Cert. Ed. RN RM Chair – Ethics Panel

*Richard Darby*

Dr Richard Darby PhD, BSc Chair – Ethics Panel

## Appendix B

### Chapter three: Phases of Thematic Analysis

#### B.1 Phase 1: Familiarising oneself with the data

All group interviews were conducted and transcribed by the researcher. Field notes were made during the interviews and were incorporated into the analysis. All transcriptions were imported into NVivo11 after revision for accuracy to the audio recording.

#### B.2 Phase 2: Generating initial codes

##### B.2.1 First cycle coding

The first cycle of coding is focussed on description (Miles et al., 2014). The purpose of the group interviews was to explore students' social media use during college adjustment, the analysis resulted in initial coding. The coding was data-driven, line by line coding was used, and yielded the following thematic maps:

Figure B.1

*Thematic map of codes relating to adjusting to college and attrition*

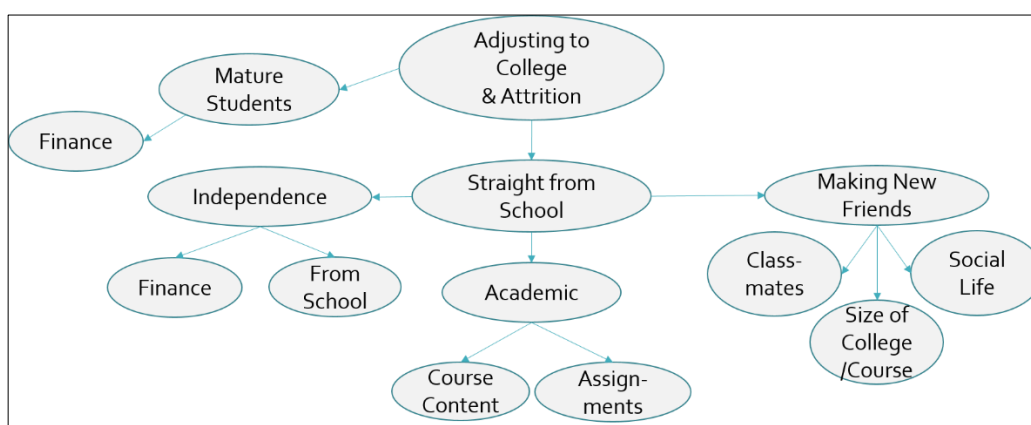


Figure B.2

Thematic map of codes relating to College Friends Communication

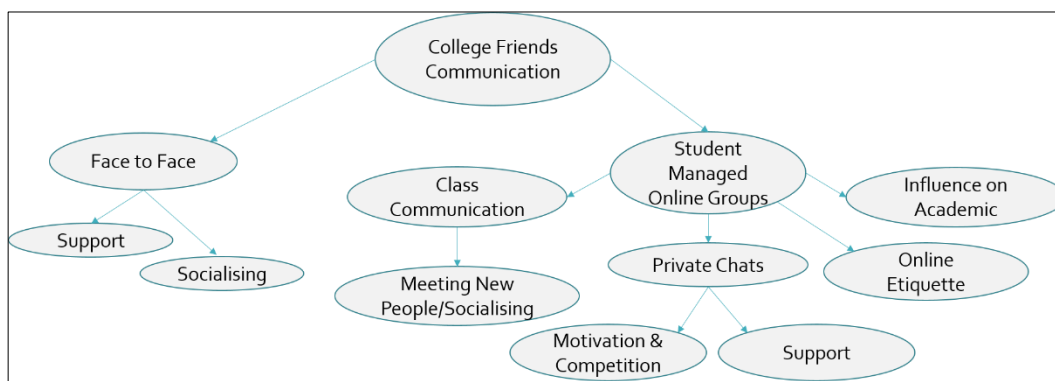
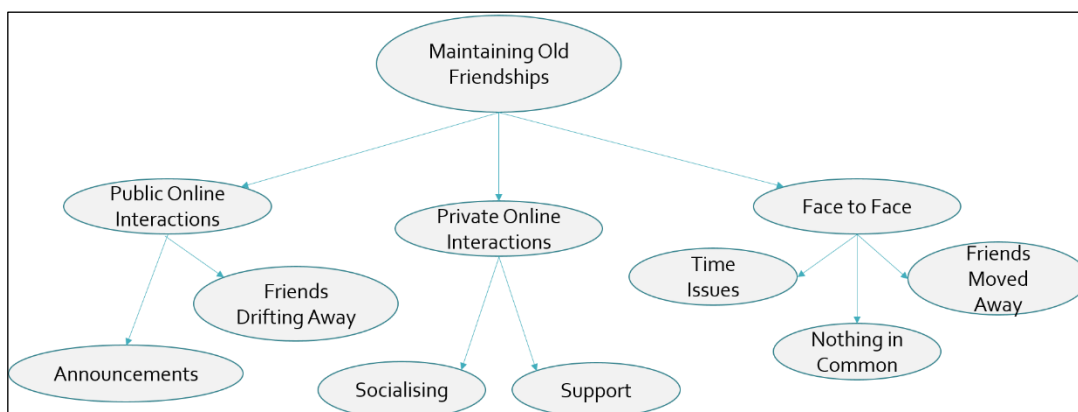


Figure B.3

*Thematic Map of Maintaining Old Friendships*



Whilst the data showed common patterns, the codes reflected the questions that were asked in the group interviews which is not acceptable practice (Braun & Clarke, 2006). On review, the research question was broken down and the analysis resumed.

### **B.2.2 The second cycle of coding**

The second cycle of coding (Miles et al., 2014) is based on the breakdown of the research question:

- What is the effect of face to face and online interactions on college adjustment?

- College Adjustment: Identify all issues, those relating to online issues and general college adjustment

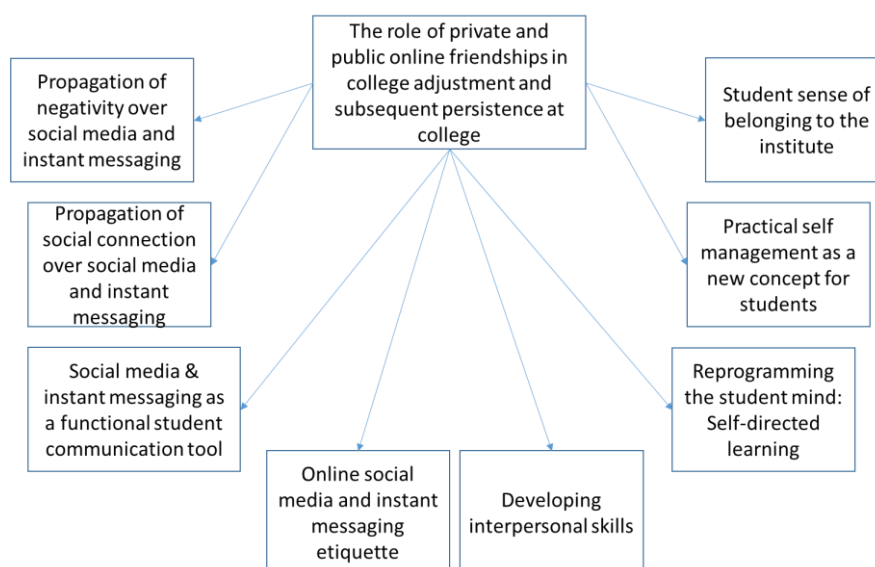
Patterns in the data were identified that related not only to college adjustment but also to social media use.

### B.3 Phase 3: Search for themes

On review of the initial codes (Braun & Clarke, 2006) and based on the research question, eight new themes were identified (see Figure B.4).

*Figure B.4*

#### *Candidate themes*



Overarching themes of 'Propagation of Negativity over Social Media and Instant Messaging' and 'Propagation of Positivity of Social Media and Instant Messaging' were identified in the data, see Figures B.5 and B.6.

Figure B.5

*Thematic map of 'Propagation of negativity over social media and instant messaging'*

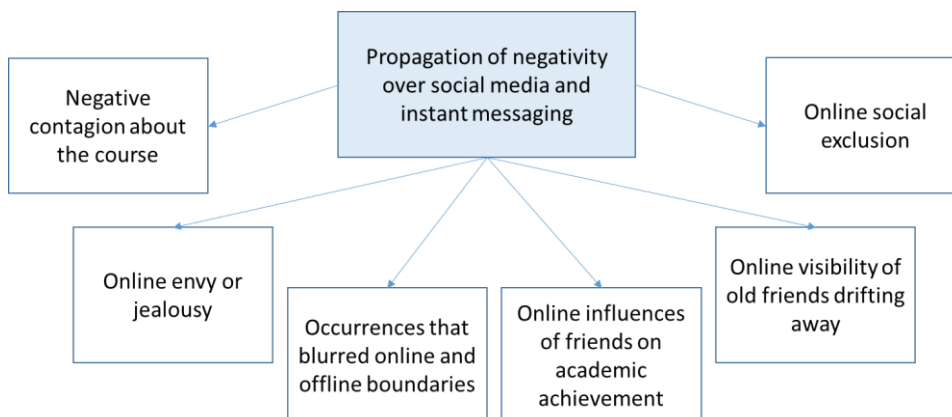
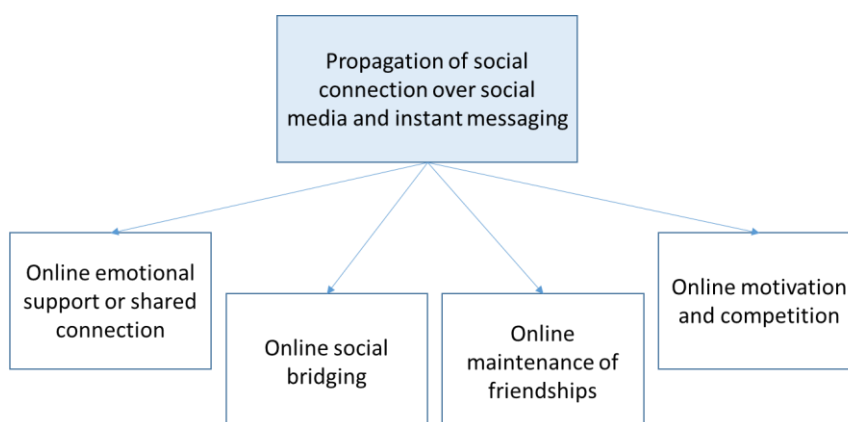


Figure B.6

*Thematic Map of 'Propagation of social connection over social media and instant messaging'*



#### **B.4 Phase 4: Refine themes**

According to Braun and Clarke (2006), the themes must accurately reflect the entire data set. There were eight themes in total, four of which related to online and four related to general college adjustment issues. Whilst the research question focussed on online behaviour and relationships, the general college adjustment issues could not be ignored. Considering literature in the area of college adjustment, these themes were reflective of findings in literature

(Baker & Siryk, 1984, 1986; Pennebaker et al., 1990). The initial analysis and identification of themes identified that online and face to face interactions co-exist, that one is not exclusive of the other.

Phase 4 began with re-reading all of the transcripts, whilst focussing on the research questions, annotating each transcript and checking that all data extracts were coded correctly. Based on selected data extracts and ensuring accurate reflection of the data in the themes, a number of themes were refined as part of this phase:

- The original overarching themes ‘Propagation of Negativity’ and ‘Propagation of Social Connectedness’ were collapsed into two new themes: ‘Social Cohesion’ and ‘Social Exclusion’
- ‘The Impact of online and Face to Face friendships’ was renamed ‘Peer Group Influences’ where some participants did not separate their University/College friends from their other friends and were equally influenced by all groups of friends.
- Reprogramming the Student Mind: Self-Directed Learning was removed and data extracts were collapsed into the overarching theme Interpersonal skills
- Student Detachment from the Institute
- Social Media and Instant Messaging as a Functional Tool and Online Social Media and Instant Messaging Etiquette were combined into one overarching theme Social Media and Instant Messaging Etiquette.
- Reprogramming the Student Mind and Self-Management as a New Concept for students were combined into Interpersonal skills.

#### ***B.4.1 New themes: Social cohesion and social exclusion***

‘Propagation of Negativity’ and ‘Propagation of Positivity’ were combined and then separated into two overarching themes: ‘Social exclusion’ and ‘Social Cohesion’. These themes consider both negative and positive experiences of college adjustment, both online and face to face. Interview participants acknowledged that online communications has a significant role in friendships, for the most part, it would seem that all face to face friends are also online and available through instant messaging and social media, see Figures B.7 and B.8.

Figure B.7

*New overarching theme: Social cohesion*

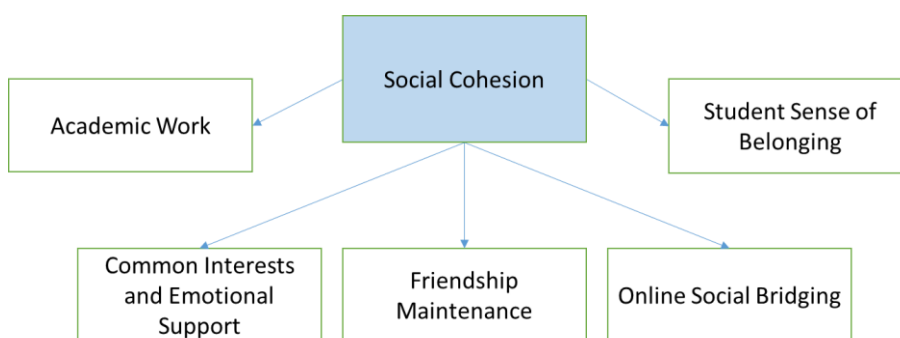


Figure B.8

*New overarching theme: Social exclusion*

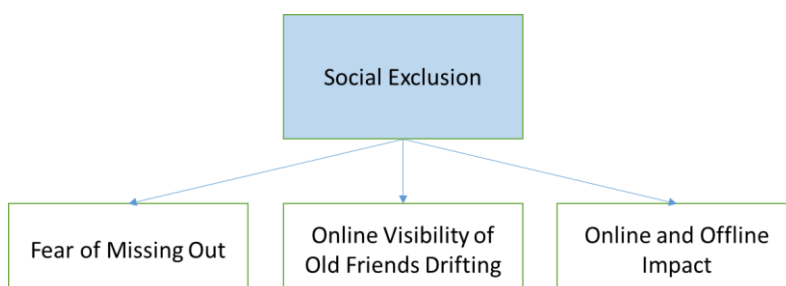
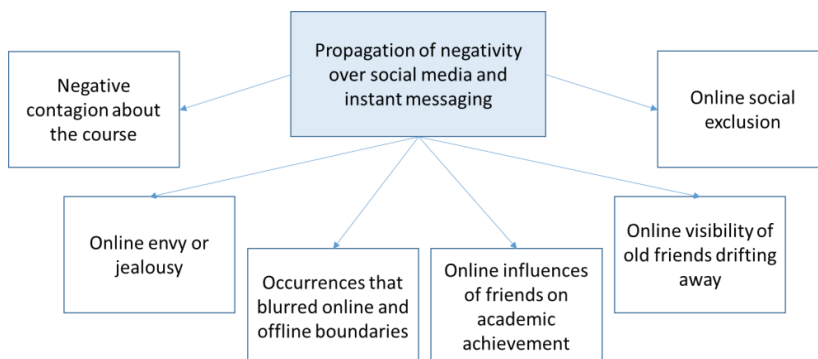


Figure B.9

*Propagation of negativity over social media and instant messaging candidate theme*



On review of this theme, propagation of negativity had negative and positive outcomes for students. In some cases, negativity bonded some groups of friends and in others, negativity had a negative effect on college adjustment for some. It was considered that to separate positive and negative propagation was a misrepresentation of the data. The following changes were made to the themes and sub-themes:

- Negative contagion about the course moved to ‘Social Cohesion’ - Common interests and emotional support, participant’s found commonalities with friends when they complained about the course or the college online. Students seemed to bond over negative aspects of their college experience
- Online envy or jealousy moved to ‘Social exclusion’ - fear of missing out. Participant’s expressed their dissatisfaction that they felt they were missing out on a better social college experience when they saw their friend’s updates on social media and instant messaging. Some participants reported that their friends were experiencing this and wanted to join their friends groups in college



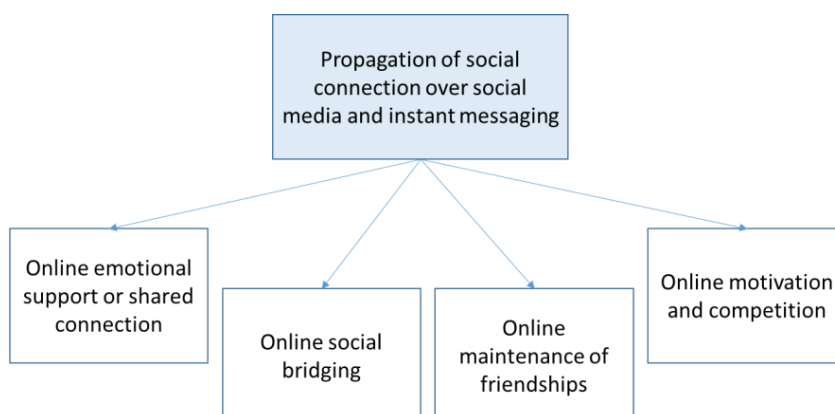
- Occurrences that blurred online and Offline boundaries -> 'Social exclusion' was renamed 'online and offline impact'. There were occurrences where an online negative event transferred to face to face issues and vice versa
- Online visibility of old friends drifting away was moved to social exclusion
- 'Online social exclusion' was distributed amongst the 3 sub-themes of Social Exclusion
- Online influences of friends on academic achievement was moved to 'Social cohesion' - academic work
- Academic work was changed to 'Online Peer Support'
- Emotional support was merged with 'Academic work'

#### ***B.4.2 Theme 2: Propagation of social connection over social media and instant messaging***

This overarching theme was collapsed and sub-themes were distributed amongst other overarching themes, such as 'social cohesion', see Figure B.10.

Figure B.10

*Propagation of social connection over social media and instant messaging candidate theme*



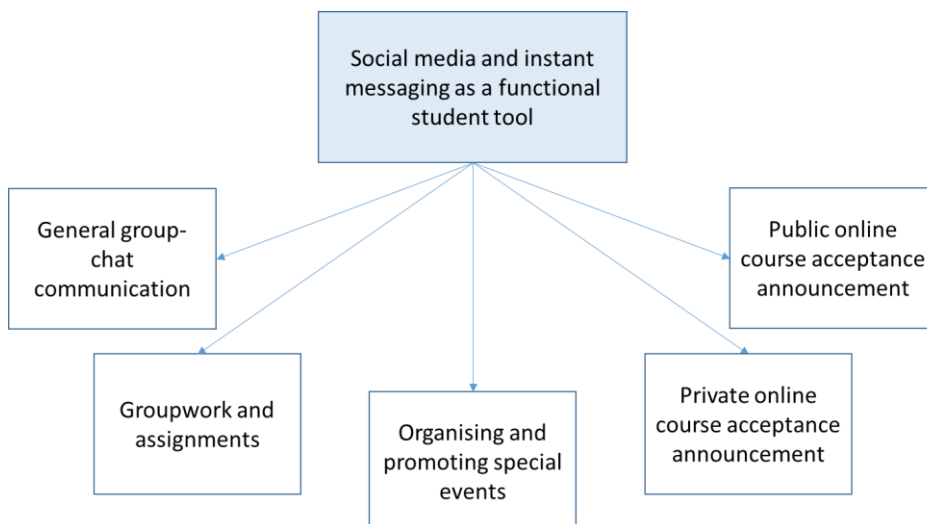
- Online emotional support or shared connection was moved to ‘Social Cohesion’ - Common interests and emotional support. Participants shared that emotional support was obtained both online and face to face.
- Online Social Bridging was moved to ‘Social Cohesion’ - Online Social Bridging. Bridging relationships was considered to be the start of social cohesion.
- Online Maintenance of Friendships was moved to ‘Social Cohesion’ - Friendship maintenance. Maintaining old friendships was considered important by some participants and that online maintenance allowed them to stay in touch more often.
- Online Motivation and Competition was moved to ‘Peer Group Influences’ - Motivation and Competition. Participants found that motivation to succeed and do well and competition with peers existed both online and face to face.

***B.4.3 Theme 3: Social media and instant messaging as a functional student tool***

This theme was removed from the analysis and the sub-themes were collapsed into other overarching themes.

Figure B.11

*Social media and instant messaging as a functional student tool candidate theme*



- General group chat communication was removed as a sub-theme and data extracts were moved to Social media and instant messaging etiquette – online usage.
- Groupwork and assignments was moved to Social cohesion- academic work. Data suggested that participants bonded on negative and positive experiences of groupwork and college assignments.
- Organising and promoting social events was moved to Social media and instant messaging etiquette – online usage. Participants adhered to an unspoken online etiquette regarding contacting each other and organising events.
- Private and public online course acceptance announcements was moved to Social media and instant messaging etiquette – Online Usage.

#### ***B.4.4 Theme 4: Social media and instant messaging etiquette***

The overarching theme did not change, however 'Online Accountability' and 'Partial Selected Online Representation' had four quotes in each sub-theme and were removed from the analysis. While online presentation is important in literature, the data in this analysis was mostly around accountability of posting an online status and following through, this was mainly in relation to statuses around studying for exams, see Figures B.12 and B.13.

Quotes in 'online trust' and 'online social cues' were distributed amongst 'distinction between online and face to face friends' and 'online usage'. A new subtheme was added 'Distinction between online and offline friends' that encapsulates all quotes referring to observed differences between friends who are solely online. The participants identified that the definition of 'friends' has changed over generations and participants expressed that on occasion it is easier to speak to someone online that they did not know. All quotes relating to the university/college website were moved to 'online usage', all quotes that discussed differences in types of friends were moved to 'online usage'.

Figure B.12

*SM and IM etiquette original candidate theme*

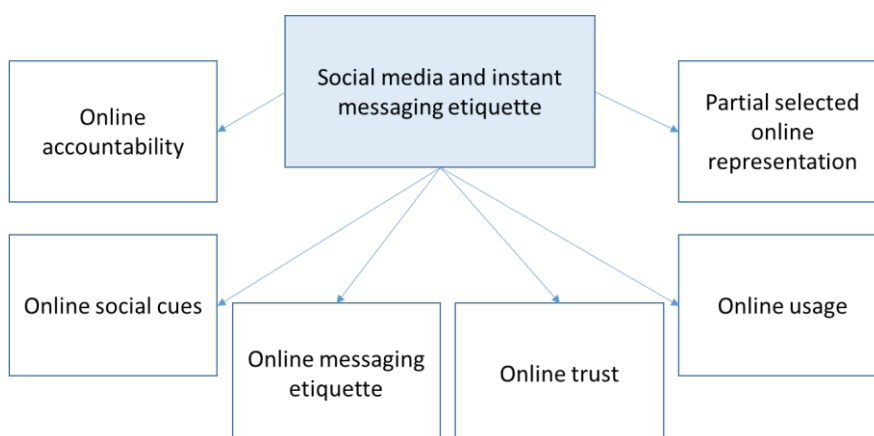
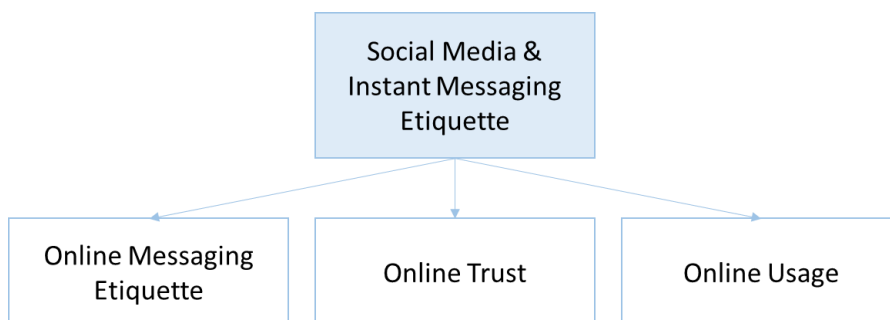
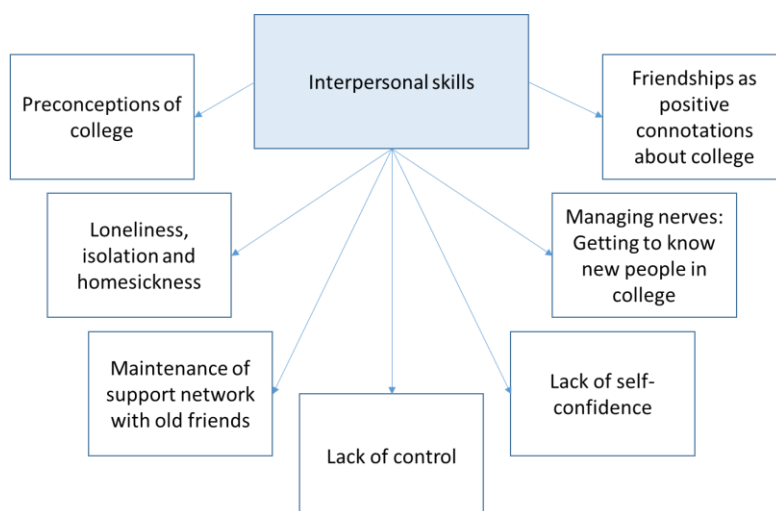


Figure B.13

*SM and IM etiquette refined theme***B.4.5 Theme 5: Developing interpersonal skills**

Interpersonal skills overarching theme was retained but changes were made as detailed below, see Figure B.14 and B.15..

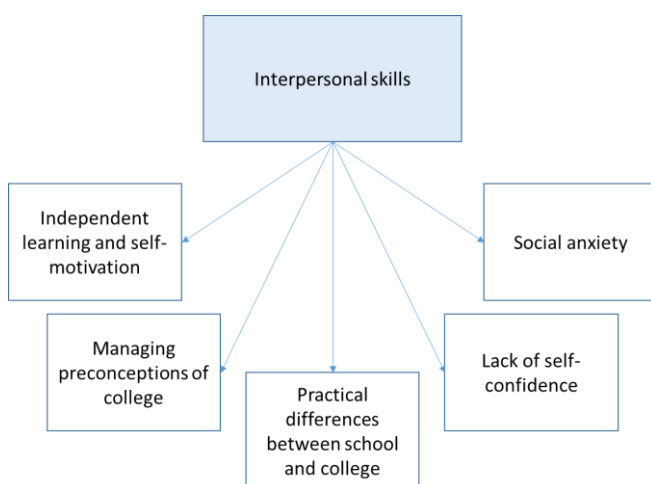
Figure B.14

*Interpersonal skills original candidate theme*

- ‘Preconceptions of College’ was moved to ‘Interpersonal skills’ - managing differences between school and college. There was a small amount of quotes so it was collapsed into another sub-theme that had similar data extracts.

- The data extracts in ‘Loneliness, isolation and homesickness’ were moved to ‘social anxiety’. Participants noted that these could contribute towards anxiety in starting college.
- ‘Maintenance of support network with old friends’ was moved to ‘Social cohesion’ - friendship maintenance.
- ‘Lack of Control’ was moved to ‘Social cohesion’ – Common interests and emotional support. Where participants bonded over mutual lack of control over situations in college and supported each other online.
- ‘Managing Nerves’ - getting to know new people in college was moved to ‘social anxiety’.
- The sub-theme, ‘Lack of self-confidence’ remained the same.
- ‘Friendships as positive connotations of college’ – moved to ‘Peer Group Influences’ – friendships as positive connotations of college. This sub-theme had a better fit in ‘Peer Group Influences’ as participants associated a positive college experience with friendships that they forged.

Figure B.15

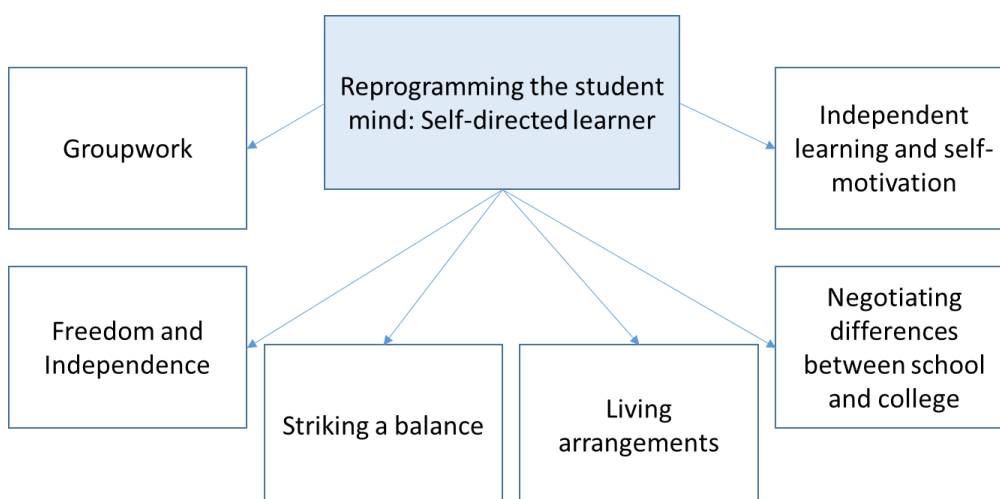
*Interpersonal skills refined theme*

#### ***B.4.6 Theme 6: Reprogramming the student mind – Self-directed learner***

This overarching theme was removed from the analysis. The sub-themes were moved or collapsed into other themes, Figure B.16.

Figure B.16

*Reprogramming the student mind: Self-directed learner candidate theme*



- ‘Groupwork’ was moved to ‘Social cohesion’ – Academic work.
- ‘Freedom and Independence’ was moved to ‘Interpersonal Skills’ – Managing differences between school and college. Participants spoke of independence as an integral part of adjusting to college.
- ‘Striking a balance’ had a few quotes so it was collapsed into ‘Managing differences between school and college’.
- ‘Living arrangements’ was moved to ‘Social cohesion’ - student sense of belonging.
- ‘Negotiating differences between school and college’ was renamed ‘Managing differences between school and college’.
- ‘Independent learning and motivation’ was moved to ‘Interpersonal skills’ - Independent learning and motivation where data extracts were similar

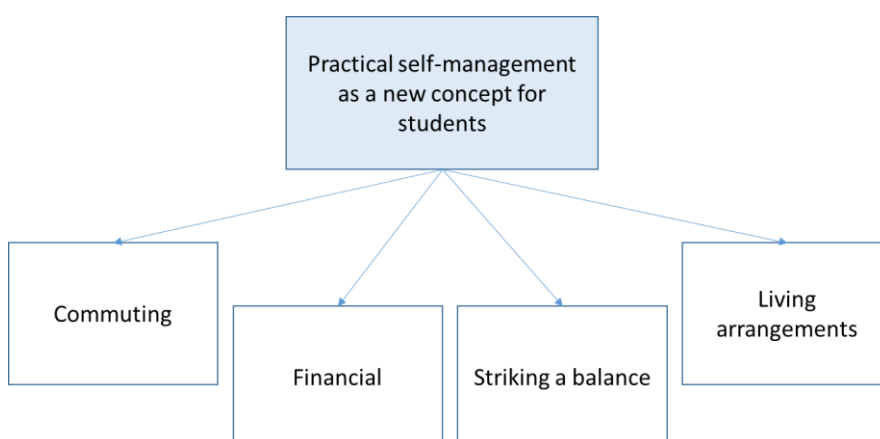
and renamed to 'Independent learning'. The overarching theme for 'Interpersonal skills' will become 'Academic and interpersonal skills'.

#### ***B.4.7 Theme 7: Practical self-management as a new concept for students***

This theme was removed from the analysis. The sub-theme 'commuting and financial' were merged into 'striking a balance'. Subsequently, 'striking a balance' and 'living' were moved into 'Reprogramming the student mind – Independence'. The data extracts within the sub-themes were relevant to 'Independence', see Figure B.17.

Figure B.17

*Practical self-management as a new concept for students candidate theme*



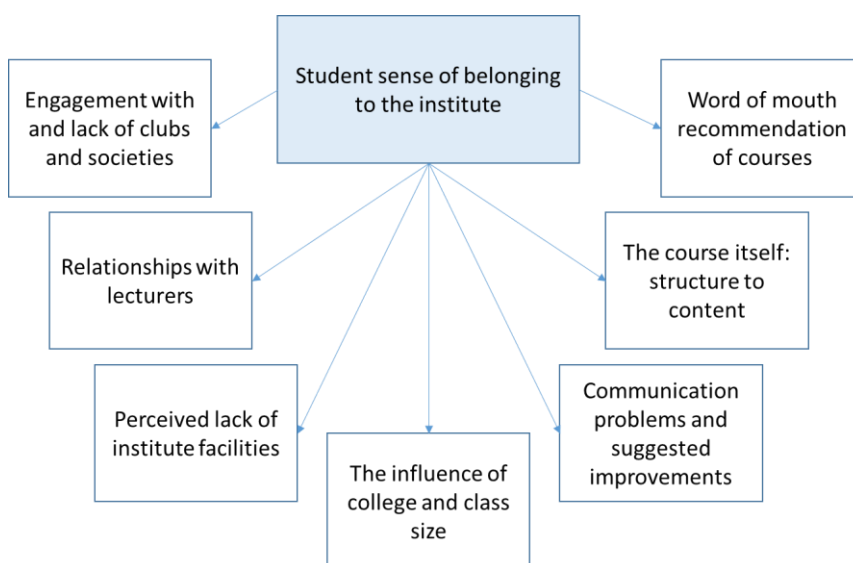
The sub-theme 'Independence' was subsequently moved into the overarching theme 'Interpersonal Skills' and it was collapsed into the sub-theme 'Independent learning and motivation'.

#### ***B.4.8 Theme 8: Student sense of belonging to the college***

This theme was removed as an overarching theme and was added as a sub-theme to 'Social Cohesion'. Participants reported that interaction with the college itself influenced their sense of belonging, see Figure B.18.



Figure B.18

*Student sense of belonging candidate theme*

- ‘Engagement with and lack of clubs and societies’ and ‘Perceived lack of institute facilities’ was moved to ‘Social cohesion’ – common interests and emotional support
- ‘Relationships with lecturers’ was removed from the analysis, there was not enough data extracts relating to this.
- ‘The Influence of college and class size’ was moved to the over-arching theme ‘Peer Group Influences’
- Data extracts in ‘Communication problems and suggested improvements’ were moved to ‘Social cohesion’ - student sense of belonging
- The course itself-structure to content had a few quotes and was collapsed into ‘Social cohesion’ – student sense of belonging
- Word of mouth recommendations of courses was not relevant to the research question, it was removed from the analysis.

#### ***B.4.9 Summary of Phase 4***

The purpose of identifying themes is to create a new instrument that addresses college adjustment issues. There were eight overarching candidate themes and 42 sub-themes in the last round of analysis.

On review, it was identified that participants did not distinguish between online and face to face relationships. All friends seemed to be online and all true online friends seemed to be face to face friends. So to separate online from face to face in over-arching themes seemed to be a misrepresentation of the data.

- Propagation of Negativity over Social Media and Instant Messaging was changed to Social Exclusion. Social exclusion includes both online and face to face activities.
- Propagation of Positivity over Social Media and Instant Messaging was changed to Social Cohesion. Social cohesion includes both online and face to face activities.
- Interpersonal Skills remains as Interpersonal skills but sub-themes were collapsed into new sub-themes such as Social Anxiety (Loneliness, Isolation and Homesickness; Managing nerves) and Managing Differences between School and College (Living arrangements, money, travel, adapting to a new way of learning etc.)
- Peer Group Influences contains sub-themes relating to online and face to face relationships, both in college and outside of college. The purpose of this study is to consider friendships as a whole, not individual breakdown of friendship types. Any friendships can be online and face to face.

- Social Media and Instant Messaging Etiquette, remains mostly the same except that some sub-themes such as ‘Online Accountability and Partial Selected Online Representation were removed and the data extracts were collapsed into the other sub-themes.

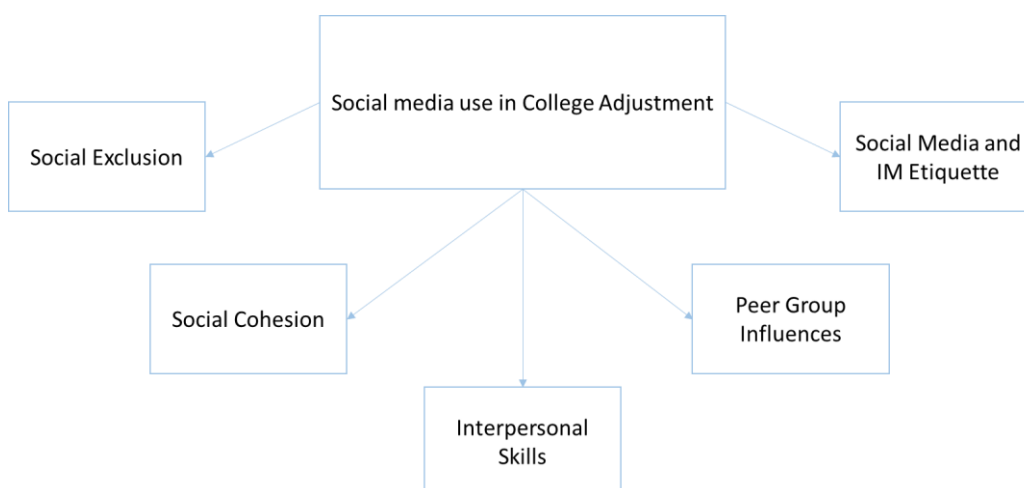
### **B.5 Phase 5: Review of candidate themes**

Phase 5 of the Braun and Clarke (2006) thematic analysis involves defining and naming each theme and sub-theme for relevancy to the story that was told by the participants and relevancy to the overall research questions, see Figure B.19. Each theme will be explored in relation to the following:

1. What is the essence of each theme?
2. How does each theme fit into the broader overall story?
3. Relate this back to the research question
4. Be able to describe the scope and content of each theme in a couple of sentences, if this can't be done, then review the theme.

Figure B.19

*Identified overarching themes*



### **B.5.1 Theme 1: Social exclusion**

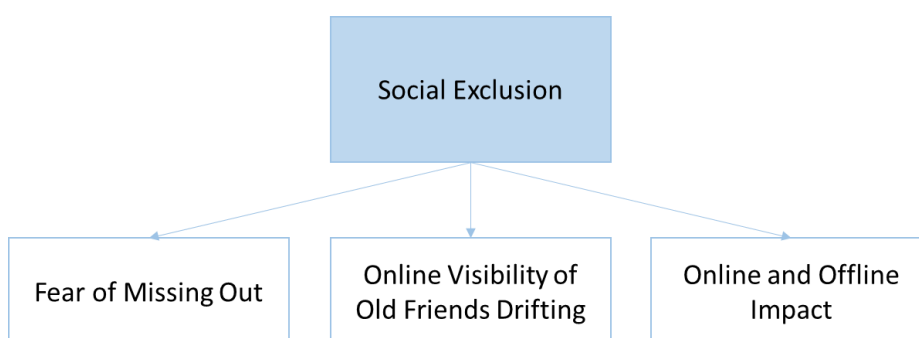
*Essence of the theme:* Students can feel excluded from groups of friends or their class both through online and face to face experiences that can impact on their day to day or online lives. Participants spoke of the negative affect of these incidences

*How does this theme fit into the broader overall story?* This theme needs to be explored in relation to the research question on the effect of online and face to face interactions on college adjustment.

*Scope and Content:* The scope of the theme includes all aspects of how social cohesion for many reasons can influence a student's college experience: fear of missing out, online visibility of old friends and online and offline impact (see Figure B.20).

Figure B.20

#### *Theme 1: Social exclusion*



#### **B.5.1.2 Sub-theme 1: Fear of missing out.**

This sub-theme contains all data extracts relating to how students felt when they thought or knew that their friends were doing something without them. Online platforms make this much more obvious to the students.

*Relationship to research question:* College adjustment: the effect of online and face to face communication.

Quote 1 “my friend goes to college in <other place> and they have a whole apartment building that is just for students in <other place>, she lives near everyone she goes to college with, they walk to college together and then they do like activities after college together so they can just walk home and whenever they go out it’s like everyone going at the same time to the same places like and we’re just like ‘oh I don’t do anything’”

Quote 2: “And like every single one of my friends in <another University>, I’m the only one who’s not in <another University>, so like you even see snapchats of them meeting up and you’d be like ‘oh they went for lunch without me’ but they’re in the same college together and that’s why, you’re not going to trek all the way back. I think that aspect for me being the only one of my friends who came here was quite lonely”

### **B.5.1.3 Sub-theme 2: Online visibility of old friends drifting.**

This sub-theme contains all data extracts relating to how students felt when they realised that their old friends were making new friends and that they were not necessarily part of their new life. Some participants raised the issue that the reverse is also true where they have made new friends and their old friends might be feeling excluded.

Relationship to research question: College adjustment: the effect of online and face to face communication.

Quote 1: “might see people more drifting towards their college friends or college life in general and leaving everyone else behind and like I suppose Facebook is a good way of being able to not monitor it but it is in, like, you can see it anyway”

Quote 2: “you have to remember that while you’re seeing your college friends, they might be seeing their college friends and they might be having really close relationships with their mates on their course and it’s hard to kind of not get maybe a little bit jealous or maybe a little bit worried about your relationship afterwards”

#### **B.5.1.4 Sub-theme 3: Offline and online impact.**

This sub-theme contains all online and offline incidences that occurred that affected the participants lives both online and offline. The boundaries between online and face to face seem to be blurred where negative or positive feelings on one medium can transfer to another.

Relationship to research question: this is relevant to the effect of online and face to face communication.

Quote 1 (Online to Face to Face impact on friend group): “if there’s like a group of people and they make a WhatsApp group with themselves, you’re going to think “ok well obviously I’m not friends with them because I’m not in that WhatsApp group or I’m not in that snapchat group” so that can make you feel quite isolated and you don’t want to go over to that group because you’re not in the group chat”

Quote 2 (Offline incident impact online and then face to face): “it just made me feel quite unwelcome to be honest like well, I think we were all a bit paranoid weren’t we cos we used to try to work out who had said what, because it was anonymous and if we’d like walk around the building, say we’d like go to the laundry room in the building, I’d walk past someone and I’d think, is that the person who had a go at me earlier online.”

### **B.5.2 Theme 2: Social cohesion**

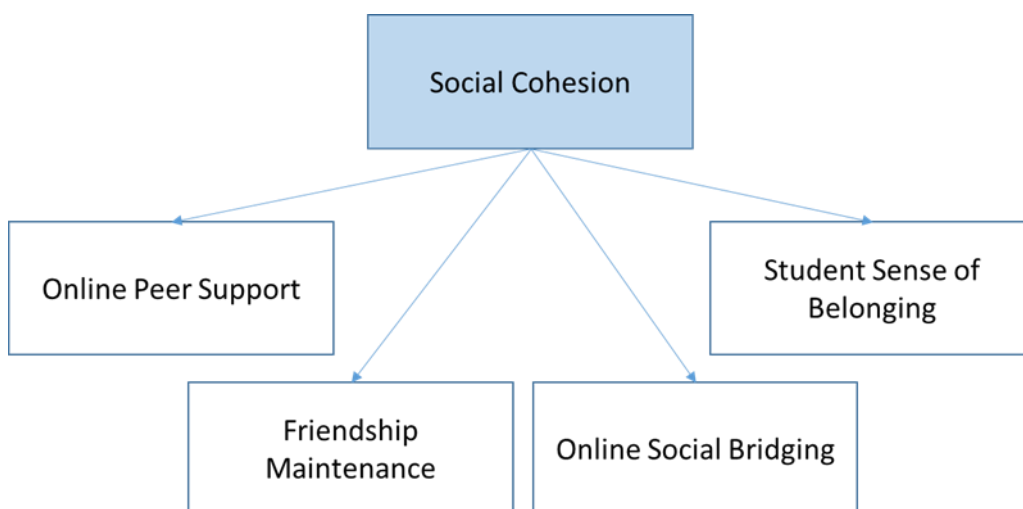
*Essence of the theme:* How students become part of a group and how social cohesion both online and face to face can affect the overall college experience for students.

*How does this theme fit into the broader overall story?* This need to be explored in relation to the effect of online and face to face communication.

*Scope and Content:* The scope of the theme includes all aspects of how social cohesion for many reasons, can influence a student's college experience: online peer support, common interests and emotional support, friendship maintenance, online social bridging and student sense of belonging (see Figure B.21).

Figure B.21

*Theme 1: Social cohesion*



#### **B.5.2.1 Sub-theme 1: Online peer support.**

This sub-theme contains data extracts when students reported that work, both individual and groupwork helped form a cohesion between the group in relation to helping each other out and general communication around

assignments. The communication could be either positive or negative in content.

Relationship to Research Question: Online peer support can influence a student's college experience either negatively or positively. This is related to adjusting to a new way of communication within a college environment.

Quote 1: "at some point I would be chatting to someone from the class on Facebook just saying like "what did you do for this", pretty much every assignment, I think I've done that"

Quote 2: "you just see people complaining about like having so much assignments and exams coming up but then you'll see like on Snapchat, they'll be having a laugh or whatever in college"

#### **B.5.2.2 Sub-theme 2: Friendship maintenance.**

This sub-theme contains data extracts where students spoke of how they manage friendships that are not in college. Mainly they report that they stay in touch via social media but that they feel that they can't develop the friendship over this medium. Others found that social media relieved the pressure of having to see their friends all of the time.

Relationship to Research Question: Students retain their friendships outside of college but as lives become busier in college, they seem to use social media to communicate and keep up with old friends.

Quote 1: "It's easier to kind of cross other these boundaries, when you have things like social media because it's not so full on, you might be able to see your friends in college, you could just be friends with them on Facebook and you feel that you get to know them more even though you might not be, you don't have the pressure of hanging around with them – you know what I mean"



Quote 2: “definitely online social media is definitely what kept it together, emm cos you know everyone’s using it and it’s it’s just really the place where, it’s really just a place where everyone is at the one spot”.

#### **B.5.2.3 Sub-theme 3: Online social bridging.**

This sub-theme contains data extracts where students spoke of how they initially connected with college friends online. Social media and instant messaging is the platform used for this. They initially got to know something about people in the class by their online profiles and then seemed to initiate conversation.

Relationship to Research Question: Students found that making new friends was easier when contact was initiated online. This sub-theme is relevant to the college adjustment issues of the effect of online and face to face communication.

Quote 1: “I do think that Facebook was good when you added someone, you could see ‘oh I actually have a few mutual friends with them’, and then that’s a conversation started for the next day”.

Quote 2: “I think because it’s really hard to go up to people and be like “hello, I know nothing about you, do you want to be friends?” but if you had a conversation online, you can work out if you have a few interests plus you can do a good old Facebook stalk and find out things about them”

#### **B.5.2.4 Sub-theme 4: Student sense of belonging.**

This sub-theme contains data extracts where students spoke of how they feel about the institute and the course that they attend. Social cohesion can occur through negativity around certain issues such as communication problems with the institute and lectures and other areas such as

accommodation, facilities, clubs and societies etc. The students highlighted that the technology that is being used by the institutes is not necessarily technology of their choice.

Relationship to Research Question: This sub-theme is related to the effect of online and face to face friendships. Some students reported that they would go to other colleges to see their friends during the day and stay there, due to lack of facilities at their own college.

Quote 1: "I like would go into <another college> just to go see my friends like, the majority of my school kinda went there so sometimes I just knock up there to meet my friends for lunch and I'll just end up talking to people all day and I'll just like stay there and just hang out"

Quote 2: "the college email is flawed in that it only lets you store, I think it's about 80 messages, one which is always taken up with 'your space is getting full' [...] it's not functional enough for you to make it your main email plus it's going to be deleted at the end of your college time so you don't trust it. So if you're going to check your email, most people don't check email unless they're looking for something specific."

### ***B.5.3 Theme 3: Academic and Interpersonal skills***

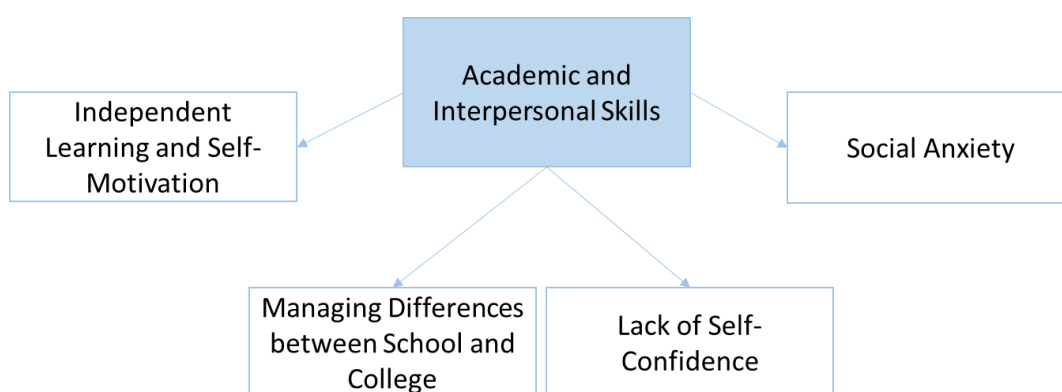
*Essence of the theme:* How students have to develop their interpersonal skills in order to adjust to a new college environment. They have to learn many new skills such as how to learn independently and how to manage their perceived freedom at college.

*How does this theme fit into the broader overall story?* this needs to be explored in relation to general new experiences in college.

*Scope and Content:* The scope of the theme includes all aspects of the development of interpersonal skills that may affect college adjustment for students across years and across courses: independent learning, managing differences between school and college, lack of self-confidence, social anxiety (see Figure B.22).

Figure B.22

*Theme 3 – Academic and Interpersonal skills*



**B.5.3.1 Sub-theme 1: Independent learning.**

This theme contains all of the data extracts that are relevant to students adapting to independent learning, being able to motivate themselves and coping with the perceived freedom that college presents.

Relationship to research question: this sub-theme is particularly relevant to college adjustment issues with regard to new experiences in college adjustment i.e. settling into a new way of learning and motivation to attend and learn.

Quote 1: “the work seems more optional than it did in school”

Quote 2: “I think kind of, people get the mindset that there is more freedom and independence in college”

### **B.5.3.2 Sub-theme 2: Managing differences between school and college.**

This theme contains all of the data extracts relating to observed differences between school and college. The data extracts cover issues from differences in teaching and learning, living arrangements, travel, work and striking an overall balance between all of the new activities. This is something that students who started college straight from school had not encountered before.

Relationship to research question: this sub-theme is particularly relevant to college adjustment issues with regard to new experiences in college adjustment i.e. managing expectations around a new environment.

Quote 1: “college is where you do the most stuff, I was actually thinking about this the other day, when I was in school, I didn’t work or anything though, none of that, I mean my mum drove me to all my hockey matches and everything like now you have to fend for yourself like”

Quote 2: “yeah I think just like trying to balance everything is a big adjustment as well because you’re trying to balance college, friends, as was said work, like some people work as well, getting here on time, assignments, everything, it’s just hard at the start”

### **B.5.3.3 Sub-theme 3: Lack of self-confidence.**

This theme contains all of the data extracts relating to confidence issues in starting college or coming back to a college environment, self-doubt and worries around methods of coping are addressed in this sub-theme.

Relationship to research question: this sub-theme is particularly relevant to college adjustment issues with regard to new experiences in college

adjustment i.e. managing expectations around a new environment and managing expectations of oneself.

Quote 1: “I wasn’t really sure if I was meant to be here or if I was able to do the course, I wanted to do it but I wasn’t a 100% sure in my mind that I would be able for it but then my confidence grew. I knew I didn’t want to do anything else”

Quote 2: “everyone is the same, everyone has the same fears, even the ones that come from college have the same insecurities and worries that I did, you do something like now we’ve got one presentation under our belt and we did well on it, when we get to the next one, those nerves aren’t going to be the same because we’re getting used to it”

#### **B.5.3.4 Sub-theme 4: Social anxiety.**

This theme contains all of the data extracts relating social anxiety issues in relation to starting college or coming back to a college environment. Students spoke of feelings of loneliness and isolation and how difficult it was to get to know new people. They also spoke of how they managed this prior to starting college.

Relationship to research question: this sub-theme is particularly relevant to college adjustment issues with regard to new experiences in college adjustment i.e. managing feelings around missing friends and the expectation to make new friends.

Quote 1: “I feel like it was a really big change for me and I arrived like didn’t know anyone, kind of like, this is a whole new experience, I was really uncomfortable about yeah like I was a real mess for the first month like ‘why did I move here?’ ‘why did I ever decide?’ ‘why did I think that I could do this?’

<laughs>. I mean like I was really scared of people and I'm very like socially anxious so I tried but I felt like no one liked me, I was really awkward."

Quote 2: "all my friends moved away to uni or they like work full time so like I never really get to see any of my friends that I wouldn't see every day do you know what I mean like, whereas at school but now I don't, I see my best friends now once every 3 months or something."

#### **B.5.4 Theme 4: Peer group influences**

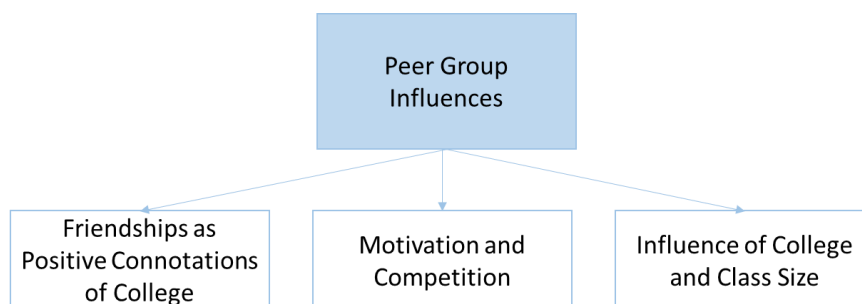
*Essence of the theme:* How students are influenced by peer groups both within a college environment and by friends outside of that environment.

*How does this theme fit into the broader overall story?* This needs to be explored in relation to the effect of Online Communication.

*Scope and Content:* The scope of the theme includes all aspects of how all types of friends can influence a student's college experience: friendships as positive connotations of college, motivation and competition and influence of college and class size (see Figure B.23).

Figure B.23

#### **Theme 4 - Peer group influences**



#### **B.5.4.1 Sub-Theme 1: Friendships as positive connotations of college.**

This subtheme contains all of the data extracts relating to how college friends can improve the college experience for students.

Relationship to research question: this sub-theme is particularly relevant to college adjustment issues with regard to the effect of online and face to face communication i.e. making new friends in college and the positive effect of those friendships on the overall college experience.

Quote 1: "I think if I didn't get along with people on the course I would have a hard time coming in and wanting to continue. I love the course alone, but I think it would be very difficult to continue to want to do it if you didn't really like anyone on the course or if you didn't have friends."

Quote 2: "Using the friends that I've made in here, definitely yeah I stayed but then I supposed it's the opposite for the friends outside of college, I'm seeing them on these courses and they're not enjoying them as much as I am. I'm realising how lucky I am to be in a course that I enjoy. [ ..] But definitely the friends in college have been a big factor"

#### **B.5.4.2 Sub-Theme 2: Motivation and competition.**

This sub-theme contains all of the data extracts relating to how friends can increase or decrease motivation and the effect of competition with friends, both old friends and college friends.

Relationship to research question: this sub-theme is particularly relevant to college adjustment issues with regard to the effect of online and face to face communication i.e. making new friends in college and the positive effect of those friendships on the overall college experience.

Quote 1: “Yeah if it wasn’t for all my friends, I don’t think I would have come back to college at all.”

Quote 2: GABRIELLA “Yeah like I know sometimes that if they don’t go to a lecture I’m like ‘ok I won’t go’ or they’re like we’ll just do this assignment on another day and I’m ok I’ll do it as well. I do get influenced like that, I try not to but I know if there are 3 of them not going to a lecture, I’ll be like ‘oh we won’t go then, I’ll just join in”

#### **B.5.4.3 Sub-Theme 3: Influence of college and class size.**

This sub-theme contains all of the data extracts relating to how class size and college size can influence the college experience for student.

Relationship to research question: this sub-theme is particularly relevant to college adjustment issues with regard to the effect of online and face to face communication.

Quote 1: “loads of my friends don’t have any friends in <other college>, so they all meet up with each other from school and that sort of stuff. They are baffled that there’s 20 of us like in the whole course and that I know everyone really well.”

Quote 2: “sometimes the classes, cos it’s so small, it’s kind of limited. Like I’m used to being in, from like in secondary school, when we used to switch classes and stuff and like I’d have my different mates in different classes, but like this class is so small. There’s only 20 people and on a good day, 7 come in, so sometimes you’re a bit like, ‘ah here who am I going to talk to in this class’, if like somebody specific is not in, you’re like ‘I’m just going to sit by myself in this class’”



### **B.5.5 Theme 5: Social media and instant messaging etiquette**

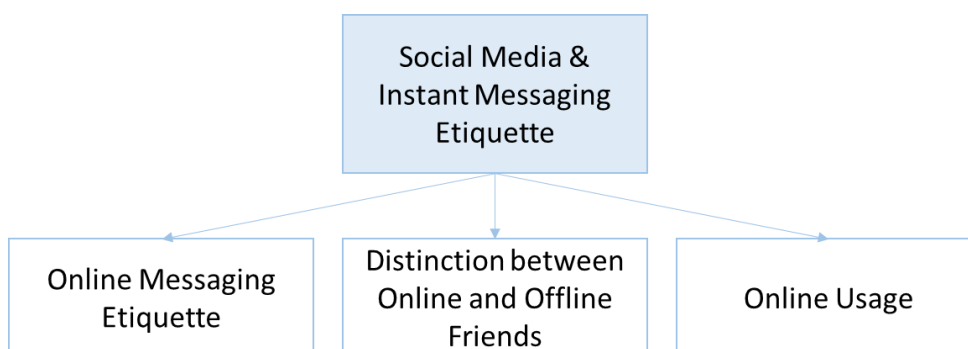
*Essence of the theme:* This theme is concerned with how social media and instant messaging is used by students and how students react to social cues online.

*How does this theme fit into the broader overall story?* This theme considers the way in which social media and instant messaging is being used by students as a new experience for students

*Scope and Content:* The scope of the theme includes all aspects of how social cohesion for many reasons, can influence a student's college experience: online messaging etiquette, distinction between online and offline friends, online usage (see Figure B.24).

Figure B.24

#### **Theme 5 - Social media and instant messaging etiquette**



#### **B.5.5.1 Sub-Theme 1: Online messaging etiquette.**

This sub-theme contains data extracts that relate to how social media and instant messaging is being used by students. There is an etiquette to follow with regard to how to contact friends online.

Relationship to research question: how social media is used as a new experience of college.

Quote 1: “the important thing is to go through the levels, you’d go from messenger, if it’s not too important maybe, to the WhatsApp, where you know you’re likely to catch them, then you go on to text on the phone when you know they can’t miss this”

Quote 2: “I think it starts with you liking the same thing like it’s more of like eh like a little nod you’re kind of trying to insinuate that you have something in common, instead of saying it”

#### **B.5.5.2 Sub-theme 2: Distinction between online and offline friends.**

This sub-theme contains all data extracts related to how students add new friends online and how they communicate with them.

Relationship to research question: how public and private groups on social media and instant messaging are being used by students.

Quote 1: “I wouldn’t call them friends, but I feel like you can talk to each other like one of them he tells me when he’s having a hard time and we like rant to each other or tell each other stories when we’re bored”

Quote 2: “I think probably we have a different definition of friends in this generation because we have so many friends and then we have our good friends, you know where you stand on the spectrum”

#### **B.5.5.3 Sub-Theme 3: Online usage.**

This sub-theme contains data extracts on how students use social media and instant messaging to communicate with friends and groups of friends. Issues such as how often they use the platforms and how they use them were raised in the group interviews. They discussed making public and private

announcements, specifically around big events such as receiving college acceptance.

Relationship to research question: this sub-theme is particularly relevant to new college adjustment issues.

Quote 1: “I check my texts a lot to reply to texts, so I’d be on Facebook, WhatsApp or Snap Chat and then put my phone away and then check 10 minutes later again, know what I mean?”

Quote 2: “Yeah, no I totally agree. People from <institute>, I chat with them more face to face because I happened to see them around [...] if they’re not in the college I would probably message them online, emm yeah

#### **B.6 Phase 6: Final themes**

A full description of the final themes are in chapter three.

## Appendix C

### Chapter three: Codebook

Themes	Sub-themes	Sources
Academic and interpersonal skills	Independent learning	12
	Lack self confidence	5
	Managing differences between school and college	14
	Managing preconceptions of college	3
	Social anxiety	15
	Loneliness, isolation & homesickness	12
	Managing nerves - getting to know new people in college	13
Peer group influences	Friendships as positive connotations of college	8
	Motivation and competition	12
	The influence of college and class size	10
Social cohesion	Online peer support	28
	Negative contagion about the course or institute	4
	Friendship maintenance	14
	Online social bridging	15
	Online source of information	10
	Student sense of belonging	15
	Communication problems and suggested improvements	15
	Housing, facilities, clubs and societies	7
Social exclusion	Fear of missing out	9
	Offline and online impact	10
	Online actions that moved to offline	4
	Offline action that moved to online	1
	Visibility of old friends drifting away	8

Themes	Sub-themes	Sources
Social media and instant messaging etiquette	Online messaging etiquette	13
	Online social cues	5
	Distinction between online and offline	11
	Online usage	15
	Private online course acceptance announcement	14
	Public online announcements	14

## **Appendix D**

### **Chapter three: Inter-rater reliability**

A discussion between a secondary coder and the researcher resulted in reviewing the codes that the secondary coder had identified to see if they fit into any of the main themes or sub-theme (see Table F.1). Five of the defined themes were identified and all selected data extracts were allocated to the overarching themes (Table F.2). This resulted in 85% inter-rater reliability which is in-line with the recommendation from Miles et al. (2014).

Some sub-themes were not evident in the samples reviewed but there was an overall agreement on themes and sub-themes in light of the two group interview transcripts. The secondary coder could not identify the following sub-themes in the coding: Online social exclusion; groupwork/assignments; structure and content; online accountability. These sub-themes are more prominent in other transcripts however, online accountability contains only one reference from one group interview so this sub-theme will not be included in the overall findings. Structure and content contains four references from three sources, so this sub-theme may not be included in the findings.

Table C.1

*Summary of inter-rater reliability*

Themes	Quote
Emotion	"it was my first choice, I got really really anxious because it meant that I had to move countries and when it finally became true, I was like 'oh God, what have I done'"
	"my friends' sister did this course and she loved it, I would be quite close with the family and she's like 'yeah it would suit you to a tee' , I was like 'ok'. So I didn't know what I wanted to do, that sounds fun"
	"em I was really excited about it eh told like family members and friends and then I did what everybody seemed to do which was put a screenshot of your offer on, I wasn't on FB at the time, but I put it on Instagram. What everyone seemed to do"
Influence of Others	"my sister went to uni, she seemed to have so many friends but to be fair, she doesn't have a degree <SARAH: laughs>, anyway I feel like 2nd year especially a lot more of it is like sitting in the library, we may as well live in the library this year <SARAH: agrees>. Yeah it's been a lot more, obviously I was expecting to do work but it's not been as social as I expected"
	"it bridges the gap meeting people especially when you can look at who's going to events and things they're putting on. Em it makes it a lot easier to organise things when you do go out."
Group Think	"I think this year just took it out of everyone though"
	"I would have been happy because it was such a long kind of route for me to get back into education so taking time out, taking time out of education s quite hard to get back into it cos your mindset stops the learning element of it and you have to kind of kickstart that learning element back into it"
Decision Making	
Social Media	"yeah just put it on Facebook"
Connectedness/Web Communication	"It was real fun when everyone was putting up what they're doing, that got me really excited but I didn't add to it, I don't know why"

Themes	Quote
Negativity	<p>"I've been so bored since September, I'm like 'am I learning anything?'"</p> <p>"I sent a message to the guy who ran the poll thing and he said it was just a bit of fun and there's nothing I can do to remove your name and it wasn't a good thing really. I ended up removing myself from the group cos I don't want that kind of thing to happen again, it's not worth the anxiety"</p>
Lack of Self-Esteem	"I was like oh she's like moved from a different country ad she knows everyone in this college and I only know like 3 people <laughs>"
No consequences	"the lack of like actual real boundaries of like 'be there at this time', you have to be there, be in until this time"
Emerging adulthood – responsibility	"college is where you do the most stuff, I was actually thinking about this the other day, when I was in school, I didn't work or anything though, none of that, I mean my mum drove me to all my hockey matches and everything like now you have to fend for yourself like"
Social connection - settling down	"I feel I settled in easy kind of because I forced myself to like feel the same way about it as I felt at school"



Themes	Quote
Making connections	<p>"I feel like it was a really big change for me and I arrive like didn't know anyone, kind of lie, this is a whole new experience, I was really uncomfortable about yeah like I was real mess for the first month "why did I move here?". "why did I ever decide?" "why did I think I could do this?" &lt;laughs&gt; I mean like I was really scared of the people and I'm like very socially anxious so I tried but I felt like no one liked me, I was really awkward.</p> <p>"I think because its really hard to go up to people and be like 'hello, I know nothing about you, do you want to be friends?' but if you had a conversation online, you can work it out if you have a few interests plus you can do a good old Facebook stalk and find out things about them"</p> <p>"I did worry about how I would make friends when I moved over as well cos I was really shy before I started university so I was a bit like am I going to make friends or not"</p> <p>"I recognised some of them from posts and I recognised their faces in lectures and things which was quite nice to put a face to name before you meet them for group work and things"</p> <p>"I don't think I particularly worried about making friends cos there was a Facebook group for the university on"</p>
Financial barriers	<p>"I suppose financial barriers, like I was accepted for the course 2 years previously but I had to defer twice basically."</p>

Themes	Quote
Travel/Commute	"In first year when we finished at like 3 on most days, I think, and then the next train wasn't until 5 so I was just waiting in the train station for like 2 hours"
Social media	"that's just the SU, they're in a bit of disarray at the moment so that can't really structure the social media in the correct way like. But I don't think they're adapting quick enough as well"
Friend Networks/Online support	"it was through Facetime, so its online <laughs>. I would like talk on Facebook and stuff, I just find that really annoying to have to type <pause> how you feel – 'I'm not feeling good today'. It's much easier to cry on the phone <laughs>"
External friends and social media	"we kind of just organise to go out through social media and all that stuff so WhatsApp and Facebook and all"
Insecurity	"took me such a long time to do it, so I think some people, I added them in November, I was too scared, I was like 'oh god what do they think of me?'" "I think social life in Uni hasn't been what I thought it would be, it's very difficult to meet people" "there is a lot of anxiety about meeting people, even if you just know one person in your group or in your lectures, .. one you can sit next to if you have to <laughs>"
Living Arrangements	"we don't have any luck do we? <laughs> My family, when I got home, they're like, "how's your week been?" and I'm like "don't get me started" and then they'll be like "you have no luck with flatmates do you?" and I'm like <shakes head> <laughs>"
Maintaining Friendships	"mine was to a family group, a group chat we had, I just posted it to everybody" "I felt a bit better knowing news about people"

Table C.2

*Comparison of codes*

First Rater Code	Second Rater Code	Example Data Extract	Match
Interpersonal Skills/Lack of Self-Confidence	Emotion	"it was my first choice, I got really really anxious because it meant that I had to move countries and when it finally became true, I was like 'oh God, what have I done"	Yes - Interpersonal skills
Social Cohesion/Student Sense of Belonging	Influence of Others	"my friends' sister did this course and she loved it, I would be quite close with the family and she's like 'yeah it would suit you to a tee' , I was like 'ok'. So I didn't know what I wanted to do, that sounds fun"	Yes - Social Cohesion
Social Cohesion/Common Interests and Emotional Support	Group Think	"I think this year just took it out of everyone though"	Yes - Social Cohesion
Interpersonal Skills/Independent learning and self-motivation	Decision Making	"I would have been happy because it was such a long kind of route for me to get back into education so taking time out, taking time out of education is quite hard to get back into it cos your mindset stops the learning element of it and you have to kind of kickstart that learning element back into it"	Yes - Interpersonal Skills
Social Cohesion/Common Interests and Emotional	Social Media Connectedness/Web Communication	"yeah just put it on Facebook" "It was real fun when everyone was putting up what they're doing, that got me really excited but I didn't add to it, I don't know why"	Yes - Social Cohesion

First Rater Code	Second Rater Code	Example Data Extract	Match
Interpersonal Skills/ Independent learning and self-motivation	Negativity	"I've been so bored since September, I'm like 'am I learning anything'?"	Yes - Interpersonal Skills
Interpersonal Skills/Lack of Self-Confidence	Lack of Self-Esteem	"I was like oh she's like moved from a different country ad she knows everyone in this college and I only know like 3 people <laughs>"	Yes - Interpersonal Skills
Interpersonal Skills/ Managing Differences between school and college	No consequences	"the lack of like actual real boundaries of like 'be there at this time', you have to be there, be in until this time"	Yes - Interpersonal Skills
Interpersonal Skills/ Managing Differences between school and college	Emerging adulthood – responsibility	"college is where you do the most stuff, I was actually thinking about this the other day, when I was in school, I didn't work or anything though, none of that, I mean my mum drove me to all my hockey matches and everything like now you have to fend for yourself like"	Yes - Interpersonal Skills
Interpersonal Skills/ Independent learning and self-motivation	Social connection – settling down	"I feel I settled in easy kind of because I forced myself to like feel the same way about it as I felt at school"	Yes - Interpersonal Skills
Interpersonal Skills/ Social anxiety	Making connections	"I feel like it was a really big change for me and I arrive like didn't know anyone, kind of lie, this is a whole new experience, I was really uncomfortable about yeah like I was real mess for the first month "why did I move here?". "why did I ever decide?" "why did I think I could do this?" <laughs> I mean like I was really scared of the people and I'm like very socially anxious so I tried but I felt like no one liked me, I was really awkward."	Yes - Interpersonal Skills
Interpersonal Skills/ Managing Differences between school and college	Financial barriers	"I suppose financial barriers, like I was accepted for the course 2 years previously but I had to defer twice basically."	Yes - Interpersonal Skills

First Rater Code	Second Rater Code	Example Data Extract	Match
Interpersonal Skills/ Managing Differences between school and college	Travel/Commute	"In first year when we finished at like 3 on most days, I think, and then the next train wasn't until 5 so I was just waiting in the train station for like 2 hours"	Yes - Interpersonal Skills
Social Cohesion/ Student Sense of Belonging	Social media	"that's just the SU, they're in a bit of disarray at the moment so that can't really structure the social media in the correct way like. But I don't think they're adapting quick enough as well"	No
Social Cohesion/ Common Interests and Emotional Support	Friend Networks/ Online support	"it was through Facetime, so its online <laughs>. I would like talk on Facebook and stuff, I just find that really annoying to have to type <pause> how you feel – 'I'm not feeling good today'. It's much easier to cry on the phone <laughs>"	Yes - Social Cohesion
Social Media & IM Etiquette/Online Usage	External friends and social media	"we kind of just organise to go out through social media and all that stuff so whatsapp and Facebook and all"	Yes - Social Media and IM Etiquette
Interpersonal Skills/Lack of Self-Confidence	Insecurity	"took me such a long time to do it, so I think some people, I added them in November, I was too scared, I was like 'oh god what do they think of me?'"	Yes - Interpersonal Skills
Social Media and IM Etiquette Peer Group Influence	Making connections	"I think because its really hard to go up to people and be like 'hello, I know nothing about you, do you want to be friends?' but if you had a conversation online, you can work it out if you have a few interests plus you can do a good"	Yes - Social Media and IM Etiquette
Interpersonal Skills Peer group Influence	Insecurity	I think social life in Uni hasn't been what I thought it would be, it's very difficult to meet people	Yes - Interpersonal Skills

First Rater Code	Second Rater Code	Example Data Extract	Match
Social Cohesion/Interpersonal Skills	Living arrangements	we don't have any luck do we? <laughs> My family, when I got home, they're like, "how's your week been?" and I'm like "don't get me started" and then they'll be like "you have no luck with flatmates do you?" and I'm like <shakes head> <laughs>	No
Interpersonal Skills Social Cohesion Social Media and IM Etiquette	Influence of others	em I was really excited about it eh told like family members and friends and then I did what everybody seemed to do which was put a screenshot of your offer on, I wasn't on FB at the time, but I put it on Instagram. What everyone seemed to do	No
Social Cohesion	Maintaining friendships	mine was to a family group, a groupchat we had, I just posted it to everybody	Yes - Social Cohesion
Peer group Influences Social Media and IM Etiquette	Making connections	I did worry about how I would make friends when I moved over as well cos I was really shy before I started uni so I was a bit like am I going to make friends or not	Yes - Peer group Influences
Peer group influences and SM & IM Etiquette	Making connections	I don't think I particularly worried about making friends cos there was a facebook group for the uni on	Yes - Peer group Influences
Social Cohesion	Maintaining friendships	I felt a bit better knowing news about people	Yes - Social Cohesion
Social Cohesion SM and IM Etiquette	Making connections	I recognised some of them from posts and I recognised their faces in lectures and things which was quite nice to put a face to name before you meet them for group work and things	Yes - Social Cohesion

First Rater Code	Second Rater Code	Example Data Extract	Match
Interpersonal Skills/ Peer Group Influences	Influence of others	my sister went to uni, she seemed to have so many friends but to be fair, she doesn't have a degree <SARAH: laughs>, anyway I feel like 2nd year especially a lot more of it is like sitting in the library, we may aswell live in the library this year <SARAH: agrees>. Yeah it's been a lot more, obviously I was expecting to do work but its not been as social as I expected	Yes - Peer group Influences
Social Media and IM Etiquette/Peer Group Influences	Influence of others	it bridges the gap meeting people especially when you can look at who's going to events and things they're putting on. Em it makes it a lot easier to organise things when you do go out.	Yes - Peer group Influences
Peer Group Influences	Insecurity	there is a lot of anxiety about meeting people, even if you just know one person in your group or in your lectures, .. one you can sit next to if you have to <laughs>	No
Social Exclusion/ SM and IM Etiquette/Interpersonal Skills	Negativity	I sent a message to the guy who ran the poll thing and he said it was just a bit of fun and there's nothing I can do to remove your name and it wasn't a good thing really. I ended up removing myself from the group cos I don't want that kind of thing to happen again, its not worth the anxiety	Yes - Social Exclusion

## **Appendix E**

### **Chapter three: Reflexivity**

In the current study, the reflexive process is used throughout the study in methodology design, data collection and data analysis. As part of the qualitative paradigm, researchers are unable to exclude themselves from both the method and interpretation stages of the analysis (Braun & Clarke, 2013a). Therefore, it is necessary to explore my own role as researcher and to consider the influence or impact that my role had on both the method and the interpretation of the research process. In the design of the study, the interview protocol was developed based on college adjustment and social media literature and content from online forums. During data collection, the participants in the study were verbally informed of my dual role of researcher and lecturer in an Irish Institute. Active listening was used to encourage participants expand on points and to encourage them to speak.

#### **E.1 An Irish Institute of Technology**

In one institute, initial contact was made with the participants in a classroom environment with the prior permission of the lecturer and the head of department. I lecture at this institute but the target audience was not the faculty in which I work and they were not my group of students. I introduced myself as a PhD student who had obtained a Master's degree in Cyberpsychology at the same institute. I found that I briefly discussed my Masters in Cyberpsychology as I was recruiting participants. Rather than withholding information about my professional work, I disclosed that I lectured in another faculty within the institute. I was concerned that disclosing that I was part of the institute staff would have a potential impact on restricting their speech and conversation.



Students did not respond verbally to this disclosure, with the exception of one who seemed interested in how I made the transition to Cyberpsychology. I gave them some background into my academic history in order to increase my perceived credibility. I knew each of the lecturers who allowed me into their classroom and each lecturer spoke briefly about me and what they knew of my work ahead of my request for participants. I felt that this endorsement from the lecturers assisted in getting participants.

Ethically, the participants and I were bound by confidentiality so the content of the discussion would not be discussed except for academic purposes as part of the overall study. However, it needs to be considered that responses from the student groups may have been influenced by my professional role within the institute.

Generally there were not many questions in the classroom about the research but I found that on the walk to the meeting rooms (which were booked in advance), many students commented on aspects such as how interesting the study was and why I was doing my PhD in the University of Wolverhampton. I responded with my history as a Master in Cyberpsychology student and how my Masters research had allowed me to further my studies.

## **E.2 UK University**

In the other institute, participants were recruited online through the Psychology Participant Pool, where they voluntarily signed up for the study and received one credit for participation. Brief details of the study were put online along with the duration, dates and times of the group interview. Students could sign up and receive credits for their participation. If students failed to show for the interview without notice, they automatically lost credits from their record

which was outside of my control. In some cases, students who did not show were penalised double the amount of credits. I received some emails from students who expressed their dissatisfaction at this. The participants had not met me before in any capacity, I gave them the same information that I gave the student groups in the Irish institute. I told them that I worked in a 3<sup>rd</sup> level institute in Ireland and that I was carrying out the same research there. I also informed them of my Masters in Cyberpsychology.

### **E.3 Conducting the interviews**

For the group interviews, I dressed in comfortable smart casual attire. I wanted the participants to view me as a PhD student and not as a professional lecturer with a view that the participants would be more likely to be freer with their speech with another student than with a member of staff. I was not met with any negativity about my research, those who wanted to participate were welcomed and those who did not were not pressurised to do so.

An interview protocol was set out as part of the ethics approval process and I used this in order to start discussions and move the conversation along. As part of the focus groups, I provided refreshments such as small cakes, biscuits, chocolate and soft drinks and water. I wanted the participants to feel comfortable both to break the ice and encourage conversation. Generally participants turned down offers of refreshments but I found that if I put them in the centre of the table that they would generally help themselves either before the interview began or at the end, seldom during the discussion (with the exception of 1 group).

I used active listening in the group interviews. I tried to encourage all participants to speak during the interview, I would always let the current speaker

finish and then ask the same question of those who were quiet such as: “and yourself, was it the same for you?”. The listening approach and attempts to encourage everyone to speak in the group was aided by my previous Masters in Psychoanalysis with Clinical Specialisation.

I allowed the participants to speak and to explain certain terms that they may have deemed that I was unfamiliar with. For example, the UK students explained the process behind attaining a place in university and some of the Irish students explained the e-learning system that was in use in the institute. I was concerned that they may think that I did not know much about the environment and that this may be treated with contempt, but instead on listening back to the interviews, this was not the case. The participants seemed eager to communicate their knowledge to me in a positive and humorous manner.

## Appendix F

### Chapter three: Excerpts from one transcript with annotations

The following excerpts are from one interview held with four first years and are annotated transcripts exported from NVivo. Direct quotes from participants are highlighted and the associated annotation note for each quote can be found in section F.2.

#### F.1 Interview transcript

¶61: *.. firstly I would like you to think back to when you were first accepted on this course, what did you feel when you got the acceptance and how did you let people know?*

¶63: BOB: My name is [] and I remember when I did first get the acceptance to the college it was just a wave of nerves first I actually had a look up online and was lucky enough to meet some of the other students on the actual page for this course so luckily enough I wasn't as nervous going in because I had a few friends previous to starting the first day, the induction day.<sup>1</sup>

¶64: *And how did you announce that, did you announce it on any social media platforms?*

¶67: KEVIN: I was the same, I was excited. emm I knew a few people who were doing it already and I was coming from <other college name> and I quit the course there because I didn't like it. I already thought about going applied <course name> here before I went to <other college name> and I didn't decide to for some reason. And then when I did get accepted, it kinda felt like I was making the right choice after making the wrong one. I didn't exactly announce it

to anyone, I mean I told family and friends. Of the friends who knew I was going, I let them know, that was it, it wasn't really like an announcement per se

¶69: VICTORIA: I'm [] and I went straight from my Leaving Cert to here so I was just kind of happy to get the points to get in here. So I was kind of like excited and then I texted my friends to let them know and then I told my family. Yeah, that's really it

¶70: ELIZABETH: yeah, I'm the same, I just did my leaving cert, I can't remember the day but I think my family were home so I just told them and I think I texted my friends and they all posted it on Facebook and I didn't do that until I actually came to the college cos I felt left out so I just did that.<sup>3</sup>

¶71: ***So think back to when you started the course, when you came in September, in your opinion and your experience so far, what are the main issues experienced by students when they start in college?***

¶72: BOB: for me, personally, I found that eh I got a big fright when I seen the funding for college, that was quite a bit of a scare when I first started, that wasn't too bad I know there are a lot of services to deal with that.<sup>4</sup>

¶74: KEVIN: I think that when you first come in I definitely knew when I came here the people straight away, there was no like anxiety or anything like that em whereas in <other college name> you're kind of in this sea of I don't know like, elitist people but it's quite like .. there was already group chats and stuff set up and <course name> Facebook page for everybody before they even came in so it was kind of good for getting to know people and and wasn't like you were .. wasn't so raw then when you came in and emm.. yeah what was I going to say

.. yeah and then like another something kind of a problem when you come in might be adjusting to or even getting to know like the workload, like cos you might feel like all of a sudden there's so much work to do and like lectures are telling you to get this text book and that text book and you're kind of going , oh shit and then whatever but you kind of realise the workload isn't maybe as intense as you thought or something like that<sup>5</sup>

¶78: VICTORIA: I really nervous about making friends on the first day and then I one I started talking to people then it was grand. Everyone was so nice and like easy to talk approach I was really worried about talking to people. I was also really nervous about the work that I wouldn't be good at it or that it would be really confusing but its fine now like, it doesn't take long to get used to<sup>6</sup>

¶79: ELIZABETH: emm yeah the first day I was so shy I did not know anyone and I didn't know there was a google chat so went in and they were all talking like they were best friends so I went in and literally sat by myself. People sat at my table and that's how I made friends, I literally though everyone knew each there and I was like oh no cos like you all had a table and you were talking as if you knew each other for years.<sup>7</sup>

¶80: ***And do you think would the online social group have created that bonding before you came in?***

¶82: BOB: it's funny looking back at it now because you see how simple everybody was and trying to be very professional about commenting in group chats. Now you wouldn't want to read some of the chats. I thought it was fun like meeting new people was just made a little easier for the people they weren't too anxious it was just nice to have someone you know inside the college from

when you were starting. The worst part is going in and kind of having to sit on your own, it can be nerve wracking especially for people who are already in a big group and make it harder.<sup>8</sup>

¶83: KEVIN: yeah I think the online class group definitely lay some sort of a foundation so it wasn't as brand new as soon as you came in. I wasn't in the actual chat until a couple of days before but even some sort of exposure to it softens it when you have to come in and chat to people and whatever<sup>9</sup>

¶84: ***How did you find out about the group?***

¶87: KEVIN: and then as the kind of year goes on, the group chat serves as kind of a communal point where you can get to know what's going on in terms of the work or whatever, so it just keeps you in the loop<sup>10</sup>

¶88: ***Ok***

¶89: BOB: keeps you fair foot as well when you see others talking about the assignment and you know you haven't started yet, it just gives you that extra bit of push as well.<sup>11</sup>

¶91: ***emm ok so .. do you think that communities, so you've already spoken about Facebook, other communities like snapchat and Instagram, do you think would they positively influence students social adjustment?***

¶98: KEVIN: snapchat is more of a personal one, I don't think it has much of an influence on the social aspect of college<sup>12</sup>

¶100: VICTORIA: if you follow people on a certain app then you've already become friends with them, type of thing.<sup>13</sup>

¶103: ***ok and generally would you use public or private groups to communicate with each other***

¶106: BOB: a lot of them would be private but then you have your public groups so if you're looking to aim a message towards a certain person or just a certain group or even just certain kinds of questions, you can go with different people for the kinds of question so you will have your few personal groups you'll also have your public groups for your overall help. I find that public groups will be based more on the course, because everyone is coming in, there's a lot of questions asked about work or what lab we have whereas the private groups just are more social gathering orientated, it's more about heading out after college or one or two people who are trying to find others on campus, or just kind of smaller reaches, less academic.<sup>14</sup>

¶109: ***So in your opinion what's the general online behaviour of college students, is it positive in relation to adjustment to college?***

¶112: BOB: it is in a sense that everybody is aiming for the same outcome of getting to know each other so now everybody has used the social network as a .. it is, it makes it a little easier for face to face interactions to kind of just text somebody and say look ehh – if you haven't spoken to this person face to face, it makes it easier, it lighten the load to ask on Facebook look do want to come out for a few drinks with us or something.<sup>15</sup>

¶113: ***Now according to my research to date emm many first year students would describe their initial experience at 3<sup>rd</sup> level as being lonely isolate, missing friends etc. would that have been true for you?***



¶114: KEVIN: personally no and I think that overall in this course. But definitely when I was in <other college name> that would have been the case for 90% of the students in my course, I only knew one guy and we just stuck together because we were in school together but making friends and stuff where somewhere that's bigger, the social atmosphere is a lot harder than in <college name>.

¶116: ELIZABETH: yeah, I think the small class sizes help a lot<sup>16</sup>

¶119: VICTORIA pretty fast because we live near each other and then, I don't know, I had her in all my classes so ..<sup>17</sup>

¶120: *ok .. so when you started here how did you start maintaining your old friendships from school? How did you do that?*

¶121: BOB: I found when I started in the year that there were one or two heads, like KEVIN that I did know previously. Which did also lighten the load as well, I found that emm a lot of all other friends from school and everything did drift away especially from my plc last year because it was only a one year type of thing, I wouldn't really speak with them anymore but we do have the group chats on face book type of thing. We still talk but a lot of people are less likely to text now that they have the new, you could nearly say that all the group chats become redundant with new colleges<sup>18</sup>

¶123: BOB: there's .. you're causing many new chats and friends on line that the old ones nearly become obsolete at that stage.<sup>19</sup>

¶124: *ok – what about the rest of your – how did you maintain your old friendships?*

¶126: VICTORIA: yeah I have loads of group chats with all my friends from school and we stay in contact all the time and we try to meet at least once a week so we don't lost contact so we go out for drinks<sup>20</sup>

¶127: BOB: its hard as well with timing

¶129: BOB: to see your friends because this college life is actually quite busy, frustrating and yet time limits for things and because you have so many different groups of friends, your own friends, old school friends that you might be able to keep in contact online but there is a very slim chance you will get to see them in person<sup>21</sup>

¶130: ELIZABETH: that is very true

¶131: KEVIN: yeah I'd say like I see them see all my friends as much as I did previously I think, a couple of times a week and I think like the main way that we communicate and stuff is probably over WhatsApp and just having a group chat with 30 people in it now, so just like everybody is constantly in the loop with everyone else, you never really leave anyone behind and you don't you know, you don't lose contact with people as quickly but then like regarding people I met in <other college name>, group chats has been taken away and muted somewhere on Facebook, just probably because I wasn't that close with them but like anybody I was close with before I stayed in contact<sup>21</sup>

¶132: *Just looking at my sub questions here, that's ok. When you were first looking at either coming to <college name> or even <other college name> – how did you explore the social aspects, did you use online forums did you talk to people? How did you do that?*

¶133: BOB: I still text friends and say how are you getting on and they say 'you know I love the course I'm doing but I haven't really made that many new friends' or they're still coming out with us. We see loads of different people joining our chats online from other colleges, they say that they wish to be part of our class that we have the best atmosphere, we have the good social aspect, so you do get outsiders into your chats every now and then<sup>22</sup>

¶142: KEVIN: yeah I think when you're finding out about the social aspects emm what you might find online if you look there might be a lot different to from what you're presented with when you come in. Like if you look up online about, I don't know, even how you go about social things to do in <college name>, you probably won't find, you'll find like the <student social area> or stuff like that but in reality you're down in the <student outdoor area> or something, do you know what I mean<sup>23</sup>

¶149: ***Ok, when how do you communicate with your college friends, do you do it online or offline or a mixture of both?***

¶150: ELIZABETH & VICTORIA: Mixture

¶151: ***It's a mixture and how much would you say?***

¶152: KEVIN: just when you're in college you're going to be speaking to them face to face but when you're not you're going to be speaking to them on Facebook or WhatsApp<sup>24</sup>

¶154: KEVIN: you can get a lot more out of talking to somebody online I think like communicating online rather than communicating by text. There's like an

extra aspect there or something cos it feels like its live, do you know what I mean?

¶156: KEVIN: cos you can see them replying or you can see them like when they've seen it<sup>25</sup>

¶166: BOB: but its finding them to speak with face to face is usually where the online interactions come in

¶167: KEVIN: hmm. It's never really anything important you'd be chatting about, well in either but especially online

¶168: BOB: the important thing is to go through the levels, you'd go from messenger, if it's not too important maybe, to the WhatsApp, where you know you're likely to catch them, then you go on to text on the phone when you know they can't miss this like you know,<sup>26</sup>

¶171: ***So do you think have your online and offline friends, have they made any difference to your college life – not just college friends?***

¶173: ***made a difference to you and your college life?***

¶174: KEVIN: I'd say so yeah – there's a lot of cross-over between old friends and bringing them into the same social groups and stuff like that so ... yeah I don't know how much of an impact it has but it's definitely a factor somewhere. As long as you're not losing your friends and you're fallen out with them over something then I think it's just positive.<sup>27</sup>

¶176: BOB: I find friends can have a very good push for you as well, me personally, my friends, they're all kinda going through a phase of mindfulness

and you know, thinking positive, and then they come to me and they give me like 'look have you done this in <course name>' and 'tell us about this' and it does make you feel pride and like everyone in our class is doing the same things, outside friends is someone you can bring your new information to. Like even sometimes I find myself sitting in class, you learn something that interests you and it does nearly take your phone out and you're sending it to them – 'bet you didn't know that lads' – you know that kind of way? And then of course it's re-enforcing it in your own head as well for the likes of exams and the more you teach the more you remember as well.<sup>28</sup>

¶178: *What do you think– have they made .. your online and offline friends .. have they made any difference to your college experience?*

¶186: *ok so you see them as being very separate?*

¶188: KEVIN: a lot of them online like, I don't know how others, my friends would see my activity online. I don't know how they view it but like when I see say somebody clicks going to something and it's their college party and some completely separate to what they would normally do with me or our friends or whatever, and then you can see a clear kind of divide but I think it depends on the person really sometimes it's just groups of friends mix or they don't or whatever but yeah you can see the degrees between peoples friendships and how they might differ. Even then you might see people more drifting towards their college friends or college life in general and leaving everyone else behind and like I suppose Facebook is a good way of being able to not monitor it but it is in, like, you can see it anyway.<sup>29</sup>

¶189: BOB: just mainly like when you tag a friend on Facebook and everybody can see it and you go from tagging your usual best friends to your college friends and they see that and like 'ah well you know there's obviously a shift here now, you know that kind of way'. You wouldn't see their messages or who they're texting but you'd notice these little small things that are just re-enforced there is different groups of friends<sup>30</sup>

¶193: .. *I'm wondering if you're friends have helped you. So do you think?*

¶194: KEVIN: I'd say definitely yeah. Using the friends that I've made in here, definitely yeah I stayed but then I supposed it's the opposite for the friends outside of college, I'm seeing them on these courses and they're not enjoying them as much as I am. I'm realising how lucky I am to be in a course that I enjoy. But having been in <other college name> last year, it's kind of like I'm glad that I'm in a course that I like so like friends, they, in that sort of sense they would have encouraged you to stay, I don't know if that makes sense but emm .. yeah. But definitely the friends in college have been a big factor<sup>31</sup>

¶195: *and do you think have your friends influenced your academic achievement?*

¶196: BOB: I'd say 'yes' simply through positive competition. Like me and me friends we all love each other but we're always trying to get one up, you know that kind of way? And me, especially when it comes to the academic side, I love heading out and having something new to tell the lads and they're sick of listening to it at this stage but like it does really keep me coming in and wanting to learn for meself as well to have that knowledge there and be able to spit it out and like allow them to learn something and I know that like they're obviously

aiming for the same thing so it's that healthy competition that keeps me like wanting to achieve and then of course like college, it's the same thing in a way, we're all aiming for the same kind of course, the same places like. We're all such good friends but we know that we're in competition with each other as well, academically speaking, not really as much socially or anything because we've just become friends but there for me like the academic style you would have a lot of competition for that<sup>32</sup>

¶197: *and would the rest of you feel the same, that your friends have influenced your academic achievement or disappointment?*

¶201: *what about your online friends or your friends in here?*

¶203: VICTORIA: you see other people working on assignments and you're like 'oh no I have to start working on this now'<sup>33</sup>

¶206: VICTORIA: everyone is just panicking about the assignment<sup>34</sup>

¶213: *ok .. and what about you girls, any – not just for yourself but generally for students – what do you think the barriers would be?*

¶214: VICTORIA: not for me but I know there is a lot of group work on this course and I feel like that for some of the projects and people like, they're put with someone they get along with and like I don't know, there could be like arguments and I feel like that would put them off a bit<sup>35</sup>

¶216: ELIZABETH: I don't know, I feel that if you start late then you miss out on making friends and people already have their little cliques kinda thing, not really

this course, everyone is kind of friendly but they still have their friend groups and you mightn't notice when people sit alone<sup>36</sup>

¶220: KEVIN: I think it helps that like there are good people in your class, we're all fairly similar because we're all doing the same course and I find that because it's a course with a certain way of thinking for the open minded like good people<sup>37</sup>

¶223: *Do you feel that a faculty presence, an online faculty or department presence might help or hinder your progression through your course?*

¶224: KEVIN: I'd say help as in just based on the fact that it's not going to directly hinder, do you know what I mean? Like if it's there, it's not going to cause you any trouble but then you know that if you do need it, you can consult the faculty or members of staff or whatever, I'd say purely academic. But I mean they do, we are told about the psychologists on campus like the therapists, not therapists but the counsellors and that sort of stuff so for people who do need to avail of that, having it online and being able to research, not research but find the information, where to go, what time you can go at, afternoon etc. because if it's not accessible to you there and then, you might shy away from it or you might give up on it. So like you know that the information is attainable, that would definitely help<sup>38</sup>

¶226: BOB: whereas if you had something that was maybe like designated for each class, you would have people then visiting the page more for that information and not sifting through, looking through like, other posts just to find



what you're looking for and you probably might not find it in general so that's

why we keep tending to shy off to the group chats instead<sup>39</sup>

¶227: *Groups be more specific, ok. What do think might make your college life better in relation to online?*

¶228: BOB: skype calls from home

¶229: KEVIN: yeah yeah like a video camera in here so you don't have to come into the lectures that would be very handy<sup>40</sup>

## F.2 Annotations

<sup>1</sup> Social cohesion - Online social bridging

Bob found that because he made friends with classmates online first, that he was not so nervous about meeting people on the first day.

<sup>2</sup> Social media and instant messaging etiquette - Online usage

Participants used public and private announcements in different ways when it came to announcing their course acceptance, generally family and close friends were told either face to face or by text/instant messaging.

<sup>3</sup> Social media and instant messaging etiquette - Online usage

Participants used public and private announcements in different ways when it came to announcing their course acceptance. Some participants reported that their friends posted announcements on Facebook but they did not feel inclined to do that.

<sup>4</sup> Interpersonal skills - Managing differences between school and college

Financial issues came up for participants in relation to new issues to deal with in college or adjustment barriers to college.

Interpersonal skills - social anxiety

There seems to be an anxiousness around meeting new people in college. The group of people or classmates can make a huge difference to the college experience. Bob emphasized that when everyone is feeling the same way, it's easier to get to know people.

<sup>5</sup> Interpersonal skills - Independent learning

Kevin spoke of the adjustment to college when students think that there is too much work to do, that sometimes it can be overwhelming. Students need to manage this and realise that it's not as bad as initially thought. The adjustment of having so much work to do could result in lack of interest so the students need to be motivated to continue with the work until they realise that the workload is manageable.

<sup>6</sup> Interpersonal skills - Independent learning /Social anxiety

Once students persist at the work, it becomes manageable. Victoria was nervous about the course and nervous about making friends but she found that once she started, everything seemed fine. She had to make the leap and start talking to people.

<sup>7</sup> Social cohesion - Online social bridging/Social exclusion - offline and online impact

The negative side of online social bridging is the fact that some students did not connect online before starting the course, simply because they did not know about the online group. So the first impressions for this participant was that she felt left out as if the rest of the class knew each other really well, she immediately felt left out and excluded from the group and isolated. Elizabeth felt that the relationships that her classmates had with each other excluded her somewhat, she did not realise that they had only met online up to this point. Their online introduction and friendships had an offline impact on Elizabeth because of how isolated it made her feel for a short period of time.

#### <sup>8</sup> Interpersonal skills - Social anxiety

When students did not know each other, the messages on social media and group chats seemed different, since getting to know each other, the chats have taken on a more informal tone. The group chats made it easier for people to get to know each other and to relieve the social anxiety that surrounded starting college.

#### <sup>9</sup> Social cohesion - Online social bridging

The concept of meeting classmates online before meeting them, seemed to soften the introduction to the course and a potential new social life. It seemed to make talking to people a lot easier at first.

#### <sup>10</sup> Social cohesion – Online peer support

As the year progresses, the importance of getting to know new classmates and meeting new people lessens. The group chat seems to be used more as a

central point for communication for general class questions and answers. It keeps everyone in the loop.

#### <sup>11</sup> Peer group influences - Motivation and competition

Bob spoke of how his friends in college and online college friends have kept him motivated to do his work. He finds that the constant communication within the group pushes him for each assignment that he has to do.

#### <sup>12</sup> Social media and instant messaging etiquette - Online messaging etiquette

There are certain apps to use for different types of communication. Kevin suggested that snapchat is not suitable for use for college based messaging.

#### <sup>13</sup> Social media and instant messaging etiquette – Distinction between online and offline friends

Victoria states that generally you make friends with people before you follow them on an online app.

#### <sup>14</sup> Social media and instant messaging etiquette - Online messaging etiquette

Bob states that there is a certain rule of thumb to follow when using group chats and online tools. Students seem to know what is appropriate content for each group chat and they post accordingly.

#### <sup>15</sup> Social cohesion - Online social bridging

When everyone is looking to meet new people and make new friends, then social media seems to be the tool that allows for this to happen. Bob suggests

that it is a forum where invites to events happen, it makes the process of invitation an easier one.

<sup>16</sup> Interpersonal skills - Social anxiety/Peer group influences - the Influence of college and class size

Making new friends is difficult in any environment but especially so if the environment is not welcoming. Bob suggested that for the students who were not living at home and who did not see their friends often, that it might be harder for them to settle into a college environment because they may be missing the social aspect of their own friends. This can be a factor in social anxiety.

<sup>17</sup> Interpersonal skills - social anxiety

Other participants reported not feeling any social anxiety because they already knew someone on their course or they made friends quickly after starting.

<sup>18</sup> Social exclusion - visibility of old friends drifting away

When group chats become obsolete and inactive, it becomes apparent that those old friends have drifted.

<sup>19</sup> Social exclusion - offline and online impact

When friendships die in a face to face environment, the online group chat becomes obsolete.

<sup>20</sup> Social cohesion – Online peer support

Generally participants reported having group chats with their friends and that events and nights out are organised online.

## 21 Social cohesion - Friendship maintenance

Participants found it hard to maintain face to face contact with their old friends, friends outside of college, due to the fact they were so busy. They find that social media and instant messaging is a handy way to keep in contact, that everyone is still in the loop and no one gets left out (purposely).

## 22 Social cohesion - Friendship maintenance/Social exclusion - Fear of missing out

The class set up chatgroups online and outside friends are now joining those chats because they are finding it hard to make friends on their course. The students joining the chats feel that they are missing out by not being on the course - they envy the atmosphere and the social side of the course that their friends are doing.

## 23 Social media and instant messaging etiquette – Online usage

The participants seemed to trust the information that they found online about the college. They partnered their online research with visiting the college to ensure that this was where they wanted to go. The atmosphere that is captured online is not necessarily the experience of the college.

## 24 Social media and instant messaging etiquette - Online usage

Kevin suggests a process by which to speak to his friends online and which platform is most appropriate.

## 25 Social media and instant messaging etiquette - Online messaging etiquette

Online messaging seems to be the priority with regard to chatting to friends, the instant notification of whether someone has seen the message is clear to the sender.

## <sup>26</sup> Social media and instant messaging etiquette - Online messaging etiquette

The process by which to contact friends is unspoken but seems clear in the minds of the participants. There is a certain etiquette involved which reduces the risk of annoying a friend in trying to contact them. Knowing the importance of the communication is of utmost importance.

## <sup>27</sup> Social cohesion - Friendship maintenance

Kevin found that his old friends, friends outside of college, have made a big difference to his college experience. He tries to keep in touch and merge them with his college friends by bringing them into the online group chats and social groups.

## <sup>28</sup> Peer group influences - Motivation and competition

Bob found that with his friends who are not in college, they push him to find out more information. He finds that knowing things that they don't know or when they ask him about certain <course name> topics, that it keeps him interested in the modules. He finds that the constant repetition to his friends keeps him prepared for exams.

## <sup>29</sup> Social exclusion - visibility of old friends drifting away

Not only could participants see their old friends drifting away but their friends can also see them drifting away through social media communications.

However, according to Kevin, students are aware that friends are drifting anyway, even without social media.

### <sup>30</sup> Social exclusion - visibility of old friends drifting away

Bob spoke of occurrences where he could see that his old friends were getting tagged on Facebook at events or with people who he didn't know. He seemed to have the knowledge that his friends were moving on without him but Facebook seemed to re-enforce that this was the case.

### <sup>31</sup> Peer group influences - Friendships as positive connotations of college

Kevin reiterated that good friendships can make students want to stay in a course and in a college. Having had a bad experience in a different university previously, he found that this new experience has led him to enjoy the course more than his friends who have not made friends yet.

### <sup>32</sup> Peer group influences - Motivation and competition

Bob combines friendship and motivation into one. He finds that there is competition with his friends that he feels is positive and this is a motivation for him to do his best. He finds that he is learning because he is interested in the subject and that he is doing it for himself. Competition and friendship seems to be synonymous with him, one not really affecting the other.

### <sup>33</sup> Peer group influences - Motivation and competition

Some of the participants found that they were motivated by the group chats to get started on work. The group chats seemed to give the impression that the class were 'so smart' - perhaps a lack of confidence or just a clear statement?



Visibility of others working on assignments seemed to motivate other students to get started on work.

#### 34 Social cohesion – sense of belonging

Some students seem to bond over panic and negative aspects of completing coursework

#### 35 Social cohesion – Student sense of belonging

Whilst academic work can help with bonding of classmates, it can also have the opposite affect which could cause animosity or unsettling amongst students.

#### 36 Social exclusion - Fear of missing out

A factor in social anxiety could be starting late in a course, where people are busy making new friends and met them previously. Some students may exclude themselves from other students because they have their friend groups so they are limiting who they can be friendly with.

#### 37 Social cohesion – sense of belonging

Some participants spoke of the fact that they have something in common with their classmates and that this commonality is bonding within the group.

#### 38 Social inclusion - Student sense of belonging

More visibility of facilities that are available to students - e.g. counsellors etc.

#### 39 Social inclusion - Student sense of belonging

Suggestions to build social media pages for each class were made where students would have class specific information - no mention of how this could be managed or who would run the pages.

<sup>40</sup> Social inclusion - Student sense of belonging

A suggestion was made to have cameras in the lecture halls so that students would not have to come into lectures

## Appendix G

### Chapter four: College adjustment pilot questionnaire 171 Items

Thank you for taking part in this study. You are required to answer all questions in this questionnaire as honestly as you can. Please don't dwell too long on any given answer. There is no time limit for the study, but we don't envisage it taking longer than 90 minutes.

***For Section A, please put a tick (✓) in the box next to the answer of your choice or write in the space provided.***

***For Section B, please select for a scale of 1 to 7 and write the most appropriate number beside the question. In addition, please answer the feedback questions at the end of each block.***

\*\*\*\*\*

#### Section A - Demographic Information

In this part of the study, we would just like to know a little more about you. Please remember that all of this information is handled confidentially and will not be linked back to individuals.

1 Please state the name of the University or College you currently attend:  
(e.g. University of Wolverhampton; IADT)

\_\_\_\_\_

2 Please state the country of the University or College you currently attend:  
(e.g. Great Britain, Ireland)

\_\_\_\_\_

3 What is the name of the course you are currently attending (e.g. Bachelor of Business (Hons) in Entrepreneurship, Bachelor of Science (BSc) (Hons) in Psychology etc.)?

\_\_\_\_\_

4 What year of study are you currently attending (*please note that some courses do not have a 4<sup>th</sup> year*):

1<sup>st</sup> ☐ 2<sup>nd</sup> ☐ 3<sup>rd</sup> ☐ 4<sup>th</sup> ☐

5 Are you currently an undergraduate student?

Yes ☒ No ☒

6 Did you attend this course straight after finishing school?

Yes ☒ No ☒

6a. If no, what did you do in the interim?

Attended another course <input checked="" type="checkbox"/>	Travelled <input checked="" type="checkbox"/>	Worked full- time <input checked="" type="checkbox"/>
Worked Part-time <input checked="" type="checkbox"/>	Other (please specify)	

7 Are you a mature student?

(i.e. did you start studying in this course when you were over the age of 23)

Yes ☒ No ☒

8 Was this course your first choice?

Yes ☒ No ☒

9 What is the highest degree or level of school you have completed?

Secondary Education <input checked="" type="checkbox"/>	Post- Secondary Education <input checked="" type="checkbox"/>	Vocational Qualification <input checked="" type="checkbox"/>	Undergraduate Degree (BA, BSc etc.) <input checked="" type="checkbox"/>
graduate Degree (MA, MSc <input checked="" type="checkbox"/>	Doctorate (PhD) <input checked="" type="checkbox"/>	Other (Please specify) <input checked="" type="checkbox"/>	

10 To which gender do you most identify?

Female <input checked="" type="checkbox"/>	Male <input checked="" type="checkbox"/>	Transgende r Male <input checked="" type="checkbox"/>	Transgender Female <input checked="" type="checkbox"/>
Gender variant/Non- conforming <input checked="" type="checkbox"/>	Not Listed <input checked="" type="checkbox"/>	Prefer not to answer <input checked="" type="checkbox"/>	

11 Year of Birth and age (in years) last birthday:

Year	<input type="text"/>
Age	<input type="text"/>

12 What is your nationality? Please select one from the list.

Afghan	Danish (Dane)	Haitian	Moroccan	Swedish
American	Dominican	Honduran	New Zealander	Swiss
Argentine/Argentinian	Dutch	Indonesian	Nicaraguan	Taiwanese
Australian	Ecuadorian	Iranian	Norwegian	Tajik
Belgian	Egyptian	Irish	Panamanian	Thai
Bolivian	Salvadorian	Israeli	Paraguayan	Turkish
Brazilian	English	Italian	Peruvian	Ukrainian
British	Estonian	Japanese	Polish	Uruguayan
Cambodian	Ethiopian	Jordanian	Portuguese	Venezuelan
Cameroonian	Filipino	Kenyan	Puerto Rican	Vietnamese
Canadian	Finnish	Laotian	Romanian	Welsh
Chilean	French	Latvian	Russian	Other
Chinese	German	Lebanese	Saudi	
Colombian	Ghanaian	Lithuanian	Scottish	
Costa Rican	Greek	Malaysian	Korean	
Cuban	Guatemalan	Mexican	Spanish	

13 Is English your first language?

Yes

☐

No

☐

14 What is your current living situation?

With  
parents/caretaker

☐

Living in  
own home

☐

University  
halls/accommodation

☐

Private  
Accommodation

☐

Other  
(please  
specify)

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***As part of this study, we would like you to provide some feedback on the questions. Please take a look at the last block of questions you answered and reply to the following questions:***

What do you think you are being asked about this block of questions?

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Did you find anything misleading or confusing about these Questions? Please tick either 'Yes' or 'No'

Yes	No
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a) If you ticked 'Yes', then please outline by writing the question number: (colon) and then your thoughts e.g. (8: I wasn't sure what 'first choice' meant)

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## Section B – College Adjustment and Online Behaviour Questionnaire

### ***Questionnaire Instructions***

In this part of the study, we would like to learn more about your university/college experiences. Please take a look at each statement and rate it on a scale of 1 (strongly agree) to 7 (strongly disagree). Again, please go with your first response and don't spend too long deliberating each question.

As part of this study, at the end of each section, feedback is requested, please answer these questions as honestly as you can.

		Applying to and starting University/College	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
1		I was attracted to the course and University/College because of the social media and website content about the University/College	1	2	3	4	5	6	7
2		If it wasn't for my old friends, I don't think I would have applied to this course	1	2	3	4	5	6	7
3		I found it easy to make the decision to apply to this course	1	2	3	4	5	6	7
4	(RS)	I opted to apply for a course that I knew I would get instead of challenging myself to do better	1	2	3	4	5	6	7
5		I chose this University/College because of its size	1	2	3	4	5	6	7



*As part of this study, we would like you to provide some feedback on the questions. Please take a look at the last block of questions you answered and reply to the following questions:*

1 What do you think you are being asked about this block of questions?

---



---

2 Did you find anything misleading or confusing about these Questions?  
Please tick either 'Yes' or 'No'

Yes

No

a) If you ticked 'Yes', then please outline by writing the question number: (colon) and then your thoughts e.g.  
(6: wasn't sure if you were asking about old friends or University/College friends)

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		Differences between school and University/College	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
6	(RS)	I find that University/College is the first place where you have to start fending for yourself	1	2	3	4	5	6	7
7	(RS)	I find that I do not have any spare time since starting University/College	1	2	3	4	5	6	7
8	(RS)	The timetable of lectures is hard to get used to in University/College	1	2	3	4	5	6	7
9		I like that University/College is not as strict as school	1	2	3	4	5	6	7
10	(RS)	The social life in University/College is not what I thought it would be	1	2	3	4	5	6	7
11	(RS)	I find budgeting very difficult when at University/College	1	2	3	4	5	6	7
12	(RS)	I have to make financial choices between living and socialising	1	2	3	4	5	6	7
13	(RS)	I found it very stressful trying to find suitable accommodation	1	2	3	4	5	6	7

		Differences between school and University/College	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
14	(RS)	I feel left out because I don't have the money to socialise	1	2	3	4	5	6	7
15	(RS)	I feel left out of the University/College social life because I live at home	1	2	3	4	5	6	7
16		I need to be organised at home so that I can attend University/College	1	2	3	4	5	6	7
17		I need to work so that I can attend University/College	1	2	3	4	5	6	7

*As part of this study, we would like you to provide some feedback on the questions. Please take a look at the last block of questions you answered and reply to the following questions:*

1 What do you think you are being asked about this block of questions?

---



---

2 Did you find anything misleading or confusing about these Questions?  
Please tick either 'Yes' or 'No'

Yes

No

a) If you ticked 'Yes', then please outline by writing the question number: (colon) and then your thoughts e.g. (6: wasn't sure if you were asking about old friends or University/College friends)

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		Community within University/College	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
18		Social media and/or instant messaging makes me feel included in the University/College environment	1	2	3	4	5	6	7
19		I think that the University/College connects with students by using online social media and instant messaging platforms	1	2	3	4	5	6	7
20	(RS)	The University/College did not let us know about the online groups before induction	1	2	3	4	5	6	7
21		Social media and/or instant messaging instills a sense of community in the class	1	2	3	4	5	6	7
22	(RS)	I felt excluded from the class group because I did not know about the course social media page in advance of starting	1	2	3	4	5	6	7
23		I feel that it is easier to get a group discussion going in online group chats than face to face	1	2	3	4	5	6	7
24	(RS)	I find it difficult to contribute to online group chats with University/College friends	1	2	3	4	5	6	7
25	(RS)	I think that email is an ineffective form of communication	1	2	3	4	5	6	7
26		I find that Instant messaging is the easiest way to communicate with my classmates	1	2	3	4	5	6	7
27		I feel that social media and/or instant messaging serves as a communal point for the class as the years progress	1	2	3	4	5	6	7

*As part of this study, we would like you to provide some feedback on the questions. Please take a look at the last block of questions you answered and reply to the following questions:*

1 What do you think you are being asked about this block of questions?

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2 Did you find anything misleading or confusing about these Questions?  
Please tick either 'Yes' or 'No'

Yes

No

a) If you ticked 'Yes', then please outline by writing the question number: (colon) and then your thoughts e.g.  
(6: wasn't sure if you were asking about old friends or University/College friends)

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		Impact of University/College Friends	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
28	(RS)	I worry that I won't fit in with my classmates							
29	(RS)	If I had more University/College friends, I would love the course more	1	2	3	4	5	6	7
30		I enjoy my University/College experience because of my college friends	1	2	3	4	5	6	7
31	(RS)	I would make more friends if the class size was smaller	1	2	3	4	5	6	7
32	(RS)	I would not continue on the course if I had not made any friends in University/College	1	2	3	4	5	6	7
33		I'm lucky to be on a course that I enjoy	1	2	3	4	5	6	7
34		My friends in University/College make it so much easier to get up in the morning	1	2	3	4	5	6	7
35	(RS)	I feel that the worst part of starting a new course, is going in and sitting on your own	1	2	3	4	5	6	7

*As part of this study, we would like you to provide some feedback on the questions. Please take a look at the last block of questions you answered and reply to the following questions:*

1 What do you think you are being asked about this block of questions?

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2 Did you find anything misleading or confusing about these Questions?  
Please tick either 'Yes' or 'No'

Yes

No

a) If you ticked 'Yes', then please outline by writing the question number: (colon) and then your thoughts e.g.  
(6: wasn't sure if you were asking about old friends or University/College friends)

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		Making new friends	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
36	(RS)	I find it difficult to make friends on my course	1	2	3	4	5	6	7
37	(RS)	I feel like I am the only one with no University/College friends	1	2	3	4	5	6	7
38		I have spoken to everyone on the course	1	2	3	4	5	6	7
39	(RS)	I find that it's easy to be lonely in University/College	1	2	3	4	5	6	7
40		The class size made it easier to speak to people	1	2	3	4	5	6	7
41	(RS)	I feel lonely in a large class	1	2	3	4	5	6	7
42	(RS)	I feel lonely at University/College	1	2	3	4	5	6	7
43		I see the same people everyday in University/College	1	2	3	4	5	6	7
44	(RS)	I feel that none of the people I have met in University/College like me	1	2	3	4	5	6	7
45	(RS)	I have no one to talk to at University/College	1	2	3	4	5	6	7
46	(RS)	I feel that my classmates don't know me	1	2	3	4	5	6	7
47	(RS)	I don't know how to go up to my classmates and get to know them	1	2	3	4	5	6	7
48	(RS)	I feel that I don't know my classmates	1	2	3	4	5	6	7
49	(RS)	I find it hard to make new friends as an adult	1	2	3	4	5	6	7



*As part of this study, we would like you to provide some feedback on the questions. Please take a look at the last block of questions you answered and reply to the following questions:*

1 What do you think you are being asked about this block of questions?

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2 Did you find anything misleading or confusing about these Questions?  
Please tick either 'Yes' or 'No'

Yes

No

a) If you ticked 'Yes', then please outline by writing the question number: (colon) and then your thoughts e.g.  
(6: wasn't sure if you were asking about old friends or University/College friends)

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		College friends and social media	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
50		I feel that I would not have gotten to know my classmates initially, if it wasn't for social media and/or instant messaging	1	2	3	4	5	6	7
51		I prefer to chat face to face than via social media and instant messaging with my University/College friends	1	2	3	4	5	6	7
52		I feel that I get to know my classmates better when I am friends with them on social media	1	2	3	4	5	6	7
53		I see my college friends a lot so I don't feel the need to talk to them online	1	2	3	4	5	6	7
54	(RS)	I feel that I would miss out on a social life if I didn't have social media accounts	1	2	3	4	5	6	7
55		I find that online interaction makes face to face social interactions easier	1	2	3	4	5	6	7
56		My classmates are my friends on social media and/or instant messaging	1	2	3	4	5	6	7
57	(RS)	When I met my new friends in University/College, we created an online group chat exclusive to our group	1	2	3	4	5	6	7
58	(RS)	I feel excluded when I am not part of my classmates social online group chats	1	2	3	4	5	6	7

*As part of this study, we would like you to provide some feedback on the questions. Please take a look at the last block of questions you answered and reply to the following questions:*

1 What do you think you are being asked about this block of questions?

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2 Did you find anything misleading or confusing about these Questions?  
Please tick either 'Yes' or 'No'

Yes

No

a) If you ticked 'Yes', then please outline by writing the question number: (colon) and then your thoughts e.g.  
(6: wasn't sure if you were asking about old friends or University/College friends)

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		College friends and support	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
59		The online college group chat calms me down at times of assignments or exams	1	2	3	4	5	6	7
60		I find that there will always be someone to say "you can do this" in the online group chats	1	2	3	4	5	6	7
61	(RS)	I feel that I should be anxious when I see in the online group chats that classmates are getting anxious about exams or assignments	1	2	3	4	5	6	7
62	(RS)	I find that it's easy to complain about the course or institute in online group chats	1	2	3	4	5	6	7
63	(RS)	I feel anxious if there is no reply to my online messages	1	2	3	4	5	6	7
64	(RS)	I would not go into a lecture without my friends	1	2	3	4	5	6	7
65	(RS)	I can see online that I am not the only one struggling with assignments	1	2	3	4	5	6	7
66		I prefer to hang out with my friends on campus than to go home after lectures	1	2	3	4	5	6	7
67		The friendships that I have in college have changed my life	1	2	3	4	5	6	7
68	(RS)	I would not be happy coming to University/College without the friends that I have met here	1	2	3	4	5	6	7

*As part of this study, we would like you to provide some feedback on the questions. Please take a look at the last block of questions you answered and reply to the following questions:*

1 What do you think you are being asked about this block of questions?

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2 Did you find anything misleading or confusing about these Questions?  
Please tick either 'Yes' or 'No'

Yes

No

a) If you ticked 'Yes', then please outline by writing the question number: (colon) and then your thoughts e.g.  
(6: wasn't sure if you were asking about old friends or University/College friends)

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		Academic work	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
69		Group work helped me meet new friends in my class	1	2	3	4	5	6	7
70		I feel that it is necessary to create an online group chat to complete a group work assignment	1	2	3	4	5	6	7
71		I find that online group chats are really useful for group work in college	1	2	3	4	5	6	7
72	(RS)	I feel that online group chats distract me from college work	1	2	3	4	5	6	7
73		I prefer to use group chats than face to face meetings when working on college assignments	1	2	3	4	5	6	7
74	(RS)	I find that face to face conversations or phone calls regarding University/College work, take up too much of my time	1	2	3	4	5	6	7
75		Online group chats relieve the stress of group work	1	2	3	4	5	6	7
76	(RS)	It takes longer to communicate about group work with classmates on group chats than face to face meetings	1	2	3	4	5	6	7
77		I don't see a bad side to using group chats for college work	1	2	3	4	5	6	7

*As part of this study, we would like you to provide some feedback on the questions. Please take a look at the last block of questions you answered and reply to the following questions:*

1 What do you think you are being asked about this block of questions?

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2 Did you find anything misleading or confusing about these Questions?  
Please tick either 'Yes' or 'No'

Yes

No

a) If you ticked 'Yes', then please outline by writing the question number: (colon) and then your thoughts e.g.  
(6: wasn't sure if you were asking about old friends or University/College friends)

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		Independent learning	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
78	(RS)	I find it hard to do work on my own initiative	1	2	3	4	5	6	7
79	(RS)	I find it demotivating when there is no one to tell me to do my work	1	2	3	4	5	6	7
80	(RS)	I find it difficult to complete assignments on time because no one is actively looking for my work	1	2	3	4	5	6	7
81	(RS)	I find it difficult to get used to the fact that I am responsible for my own learning	1	2	3	4	5	6	7
82	(RS)	I find it difficult to motivate myself to attend because no one is taking attendance	1	2	3	4	5	6	7
83		I understand the work that I have to do	1	2	3	4	5	6	7
84	(RS)	I feel like I moved from an environment where I got a lot of help, to an environment where I have to do everything for myself	1	2	3	4	5	6	7
85	(RS)	I have to do a lot of work to make sense of the assignments	1	2	3	4	5	6	7
86	(RS)	I am really nervous that I will not be good at the assignments	1	2	3	4	5	6	7
87		I know that I will be successful on the course	1	2	3	4	5	6	7
88	(RS)	I feel very nervous when I think about exams	1	2	3	4	5	6	7



*As part of this study, we would like you to provide some feedback on the questions. Please take a look at the last block of questions you answered and reply to the following questions:*

1 What do you think you are being asked about this block of questions?

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2 Did you find anything misleading or confusing about these Questions?  
Please tick either 'Yes' or 'No'

Yes

No

a) If you ticked 'Yes', then please outline by writing the question number: (colon) and then your thoughts e.g.  
(6: wasn't sure if you were asking about old friends or University/College friends)

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Solve this puzzle (participants can skip the puzzle)

9	7	8	1	4	5	3	2	6
4			3			5	9	1
5				6		7	4	8
2	4	9	7	3	8	1	6	5
3	5			2	6		8	7
8	6			9		4	3	2
7	8	4	6			2		9
1	9	2			4		5	3
6	3	5	9	1	2	8	7	4

		Old friends - keeping in touch	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
89	(RS)	I would feel out of touch with my old friends without social media and/or instant messaging	1	2	3	4	5	6	7
90	(RS)	I feel that social media reinforces the fact that my old friends are making new friends without me	1	2	3	4	5	6	7
91		I use social media and instant messaging to stay in touch with old friends who moved away	1	2	3	4	5	6	7
92		I use instant messaging and social media to keep track of what my old friends are doing	1	2	3	4	5	6	7
93	(RS)	I would feel disconnected with my life outside of University/College, if I didn't have instant messaging or social media	1	2	3	4	5	6	7
94		I keep in touch with my old friends through social media and instant messaging more so than face to face	1	2	3	4	5	6	7
95		I feel included when I am part of my old friends' new online group chats	1	2	3	4	5	6	7
96		I want to be included in my old friend's group chats	1	2	3	4	5	6	7
97		I always add my old friends to my new online friends' group chat	1	2	3	4	5	6	7
98		I want to see what my old friends are doing without me	1	2	3	4	5	6	7
99	(RS)	I find that my old friends are difficult to contact	1	2	3	4	5	6	7

*As part of this study, we would like you to provide some feedback on the questions. Please take a look at the last block of questions you answered and reply to the following questions:*

1 What do you think you are being asked about this block of questions?

---



---

2 Did you find anything misleading or confusing about these Questions?  
Please tick either 'Yes' or 'No'

Yes

No

a) If you ticked 'Yes', then please outline by writing the question number: (colon) and then your thoughts e.g.  
(6: wasn't sure if you were asking about old friends or University/College friends)

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		Old friends - developing friendship	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
100	(RS)	I feel that I am missing out when I see my old friends' social media updates	1	2	3	4	5	6	7
101		I feel happy when I see my old friends tagged on social media posts with their new group of friends	1	2	3	4	5	6	7
102	(RS)	From what I see on Social media and instant messaging, I feel that my old friends have a much better social life in University/College than I do	1	2	3	4	5	6	7
103	(RS)	I feel left out when I realise that my old friends are making new friends in University/College	1	2	3	4	5	6	7
104	(RS)	I feel that my old friends are envious of the friends I've made in University/College	1	2	3	4	5	6	7
105	(RS)	I find that conversation gets boring when I only see my old friends on social media	1	2	3	4	5	6	7
106	(RS)	I feel that I miss out on social events when I am not part of an online group chat	1	2	3	4	5	6	7
107		I feel that my friends are with me when I am chatting to them online	1	2	3	4	5	6	7
108	(RS)	I find that it's more awkward to re-message an old friend than it is to message a new friend on social media	1	2	3	4	5	6	7
109		When I get frustrated in University/College, I vent to my old friends online	1	2	3	4	5	6	7

*As part of this study, we would like you to provide some feedback on the questions. Please take a look at the last block of questions you answered and reply to the following questions:*

1 What do you think you are being asked about this block of questions?

---



---

2 Did you find anything misleading or confusing about these Questions?  
Please tick either 'Yes' or 'No'

☐ Yes

☐ No

a) If you ticked 'Yes', then please outline by writing the question number: (colon) and then your thoughts e.g.  
(6: wasn't sure if you were asking about old friends or University/College friends)

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		Time for old friends	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
110		I want to meet my old friends, face to face, to just sit down and talk	1	2	3	4	5	6	7
111	(RS)	I feel that my old friends' new groups are more important to them than I am	1	2	3	4	5	6	7
112		I miss my old friends if I don't see them	1	2	3	4	5	6	7
113	(RS)	I don't have time to see my old friends	1	2	3	4	5	6	7
114	(RS)	I don't see my old friends as often as I would like	1	2	3	4	5	6	7
115	(RS)	It's hard to see my old friends because University/College is so busy	1	2	3	4	5	6	7
116	(RS)	I wish I chose the same career/academic path as my old friends	1	2	3	4	5	6	7
117	(RS)	I feel that my old friends don't have time to see me	1	2	3	4	5	6	7
118	(RS)	It upsets me when I see online that my old friends are meeting up without me	1	2	3	4	5	6	7
119	(RS)	I feel that I am missing out on the University/College social life because my life is so busy	1	2	3	4	5	6	7

*As part of this study, we would like you to provide some feedback on the questions. Please take a look at the last block of questions you answered and reply to the following questions:*

1 What do you think you are being asked about this block of questions?

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2 Did you find anything misleading or confusing about these Questions?  
Please tick either 'Yes' or 'No'

Yes

No

a) If you ticked 'Yes', then please outline by writing the question number: (colon) and then your thoughts e.g.  
(6: wasn't sure if you were asking about old friends or University/College friends)

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		Motivation and competition	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
120		Online group chats keep me motivated to push myself further in my work	1	2	3	4	5	6	7
121		When I tell friends that I am studying or doing college work, it motivates me to complete it	1	2	3	4	5	6	7
122	(RS)	I see my old friends having a great time online, and wish that I didn't have to go to University/College	1	2	3	4	5	6	7
123		I see what my friends/family are doing and that motivates me to continue	1	2	3	4	5	6	7
124		My old friends make me feel that I'm doing well at University/College	1	2	3	4	5	6	7
125		I see my friends progressing their studies and it motivates me to keep going with mine	1	2	3	4	5	6	7

*As part of this study, we would like you to provide some feedback on the questions. Please take a look at the last block of questions you answered and reply to the following questions:*

1 What do you think you are being asked about this block of questions?

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2 Did you find anything misleading or confusing about these Questions?  
Please tick either 'Yes' or 'No'

Yes

No

a) If you ticked 'Yes', then please outline by writing the question number: (colon) and then your thoughts e.g.  
(6: wasn't sure if you were asking about old friends or University/College friends)

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		Online etiquette	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
126		I occasionally unfriend old friends on social media	1	2	3	4	5	6	7
127	(RS)	Sometimes, I feel under pressure by my old friends to make announcements on social media	1	2	3	4	5	6	7
128		I only post to groups on social media sites as opposed to public posts	1	2	3	4	5	6	7
129		I think it's socially acceptable when friends refer to my social media posts in conversation	1	2	3	4	5	6	7
130		I find that that I have a shared interest with people who I have met online	1	2	3	4	5	6	7
131		I use social media and/or instant messaging to keep in touch with family members	1	2	3	4	5	6	7
132		I prefer to phone family members or speak to them face to face	1	2	3	4	5	6	7
133	(RS)	I think it's intrusive when friends refer to my social media posts on other social media platforms	1	2	3	4	5	6	7
134		I like to see if my friends have seen my online message	1	2	3	4	5	6	7
135	(RS)	I think it's rude when people do not reply to online messages	1	2	3	4	5	6	7
136		I frequently check my phone for messages	1	2	3	4	5	6	7
137		I like to respond to a message as soon as I see it	1	2	3	4	5	6	7
138		I try to keep online messaging to a minimum	1	2	3	4	5	6	7
139		All organisation for meeting up happens online	1	2	3	4	5	6	7

*As part of this study, we would like you to provide some feedback on the questions. Please take a look at the last block of questions you answered and reply to the following questions:*

1 What do you think you are being asked about this block of questions?

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2 Did you find anything misleading or confusing about these Questions?  
Please tick either 'Yes' or 'No'

Yes

No

a) If you ticked 'Yes', then please outline by writing the question number: (colon) and then your thoughts e.g.  
(6: wasn't sure if you were asking about old friends or University/College friends)

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		Online trust	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
140	(RS)	I find it easier to have online only friends	1	2	3	4	5	6	7
141		I have online friends who I message but have never spoken to them face to face	1	2	3	4	5	6	7
142	(RS)	I feel that I cannot have the same emotional connection with online friends through messaging or social media	1	2	3	4	5	6	7
143		My online only friends are mutual friends	1	2	3	4	5	6	7
144		I have online friends who I do not communicate with	1	2	3	4	5	6	7
145		I confide in my online only friends when I feel frustrated	1	2	3	4	5	6	7
146	(RS)	I'm not as close with online only friends	1	2	3	4	5	6	7
147		I only add friends online after I've met them face to face	1	2	3	4	5	6	7

*As part of this study, we would like you to provide some feedback on the questions. Please take a look at the last block of questions you answered and reply to the following questions:*

1 What do you think you are being asked about this block of questions?

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2 Did you find anything misleading or confusing about these Questions?  
Please tick either 'Yes' or 'No'

☐ Yes

☐ No

a) If you ticked 'Yes', then please outline by writing the question number: (colon) and then your thoughts e.g.  
(6: wasn't sure if you were asking about old friends or University/College friends)

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		Online interpretation	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
148	(RS)	I feel it's hard to gauge reactions online	1	2	3	4	5	6	7
149	(RS)	I feel like I censor myself online	1	2	3	4	5	6	7
150	(RS)	My online messages can be misinterpreted	1	2	3	4	5	6	7
151	(RS)	I find that sarcasm is difficult to interpret online	1	2	3	4	5	6	7
152		I find that it's much easier to express emotion on the phone than on social media or instant messaging	1	2	3	4	5	6	7
153	(RS)	I find that people are easily offended online	1	2	3	4	5	6	7
154	(RS)	I find that it's hard to get my point across in group chats	1	2	3	4	5	6	7
155		I prefer using video chat so that I can see the person I am talking to	1	2	3	4	5	6	7
156	(RS)	I prefer to use voice notes instead of instigating a discussion in online group chats	1	2	3	4	5	6	7
157	(RS)	I feel awkward when people do not respond to my texts on group chat	1	2	3	4	5	6	7

*As part of this study, we would like you to provide some feedback on the questions. Please take a look at the last block of questions you answered and reply to the following questions:*

1 What do you think you are being asked about this block of questions?

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2 Did you find anything misleading or confusing about these Questions?  
Please tick either 'Yes' or 'No'

☐ Yes

☐ No

a) If you ticked 'Yes', then please outline by writing the question number: (colon) and then your thoughts e.g.  
(6: wasn't sure if you were asking about old friends or University/College friends)

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		Negative incidents relating to online	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
158	(RS)	Sometimes I feel uncomfortable with content on groupchats with old friends	1	2	3	4	5	6	7
159	(RS)	Sometimes I feel uncomfortable with content on groupchats with University/College friends	1	2	3	4	5	6	7
160	(RS)	It upsets me when an online negative incident carries over into face to face interaction	1	2	3	4	5	6	7
161	(RS)	A negative online experience made me feel unwelcome in University/College	1	2	3	4	5	6	7
162	(RS)	I feel powerless when there is a negative online experience	1	2	3	4	5	6	7
163		On at least one occasion, negative behaviour by others prompted me to leave online groups on social media and/or group chats	1	2	3	4	5	6	7

*As part of this study, we would like you to provide some feedback on the questions. Please take a look at the last block of questions you answered and reply to the following questions:*

1 What do you think you are being asked about this block of questions?

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2 Did you find anything misleading or confusing about these Questions?  
Please tick either 'Yes' or 'No'

☐ Yes

☐ No

a) If you ticked 'Yes', then please outline by writing the question number: (colon) and then your thoughts e.g.  
(6: wasn't sure if you were asking about old friends or University/College friends)

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		Sense of belonging	Strongly Agree	Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Disagree	Strongly Disagree
164		I find that the lecturers are helpful when it comes to college work	1	2	3	4	5	6	7
165	(RS)	It's easier to send an email to a lecturer than to talk to them	1	2	3	4	5	6	7
166	(RS)	I feel that during the day, there is nothing keeping me here once lectures are finished	1	2	3	4	5	6	7
167	(RS)	I sometimes go to my old friends' University/College and stay there for the rest of the day	1	2	3	4	5	6	7
168	(RS)	I just go to lectures and then go home	1	2	3	4	5	6	7
169	(RS)	I feel that the University/College social life is non-existent	1	2	3	4	5	6	7
170		I think that clubs and Societies are promoted well online	1	2	3	4	5	6	7
171	(RS)	I think there is an over-reliance on digital communication from the University/College	1	2	3	4	5	6	7

*As part of this study, we would like you to provide some feedback on the questions. Please take a look at the last block of questions you answered and reply to the following questions:*

1 What do you think you are being asked about this block of questions?

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2 Did you find anything misleading or confusing about these Questions?  
Please tick either 'Yes' or 'No'

☐ Yes

☐ No

a) If you ticked 'Yes', then please outline by writing the question number: (colon) and then your thoughts e.g.  
(6: wasn't sure if you were asking about old friends or University/College friends)

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## Appendix H

### Chapter four: Ethics approval documentation

#### H.1 IADT ethics statement of approval



IADT Institute Research Ethics Committee

Statement of Ethical Approval

Title of project: An Exploration of the Role of Private and Public Online Friendships  
in College Adjustment and Persistence in College.

Name of researcher: Audrey Stenson

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This project has been reviewed under the IADT Ethics Policy and is now approved.

Signed:

*(Dr. Elaine Sisson, Chair, IADT Institute Research Ethics Committee)*

Date: 14 March, 2018

**Notes**

- 1) Research proposals can receive only provisional approval from the Institute Research Ethics Committee in the absence of approval from any agency where you intend to recruit participants.
- 2) Where your application for ethical approval is rejected, you or your supervisor will be informed. The grounds for refusal will be outlined and will have to be addressed in your re-submission.
- 3) Approved proposals will be retained in IADT for 5 years after the research has been completed.

## H.2 University of Wolverhampton ethics statement of approval



26<sup>th</sup> April 2018

Audrey Stenson (Alison Attrill-Smith) University of Wolverhampton FEHW

Dear Audrey Stenson (Alison Attrill-Smith)

**Re: CYBERPSYCHOLOGY, submitted to The Faculty of Education, Health and Wellbeing Ethics Panel (Health Professions, Psychology, Social Work & Social Care)**

The Faculty Ethics Panel (Health Professions, Psychology, Social Work & Social Care) has considered and reviewed your submission.

On review your Research Proposal was passed and the Panel believes that the ethical issues inherent in your study have been adequately considered and addressed. Therefore the Panel is giving you full ethical approval for your study (Code 1 - Approved). We would like to wish you every success with the project. We would like to wish you every success with the project.

Yours sincerely

**Angela Clifford**

*Dr Angela Clifford (BSc, MSc, PhD, CPsychol)*

Chair – Ethics Panel

## Appendix I

### Chapters four, five and six: Codebook

#### I.1 Demographic variables

Q	Variable	SPSS Variable Name	Coding Instructions
	Consent questions		1 Yes
Q1	The name of the University or College you currently attend	Institute_Name  Insitute_Name_Other	1 Irish Institute 2 UK University
Q2	The country of the University or College you currently attend	Country  Country_Other	1 Ireland 2 Great Britain 3 Other
Q3	Course Name	Course_Name	Bachelor of Business (Hons) 1 In Entrepreneurship Bachelor of Business (Hons) in Entrepreneurship and 1 Management Bachelor of Business in 1 Applied Entrepreneurship Bachelor of Business (Hons) 2 in Arts Management BSc (Hons) in Applied 3 Psychology Bachelor of Science (Hons) in 4 Creative Computing Bachelor of Arts (Hons) in 5 Visual Communication 6 BA (Hons) New Media Studies BA (Hons) in Creative Music 7 Production BSc (Hons) in Psychology 8 (Criminal Behaviour) BSc (Hons) in Psychology 9 with Counselling 10 BSc (Hons) in Psychology BSc (Hons) Psychology with 11 Foundation Year BA (Hons) in Creative and Professional Writing and 12 English



Q	Variable	SPSS Variable Name	Coding Instructions
Q4	Year of study currently attending	Course_Year	1 1st year 2 2nd year 3 3rd year 4 4th year
Q5	Currently an undergraduate student	Undergrad	1 Yes 2 No
Q6	Did you attend this course straight after finishing school?	Straight_From_School	1 Yes 2 No
Q6 - 'No'	Interim activity (Gap between School and Uni)	Gap_SU	1 Attended another course 2 Travelled 3 Worked full-time 4 Worked part-time 5 Other
Q7	Mature Student	Mature_Student	1 Yes 2 No
Q8	Was this course your first choice?	First_choice	1 Yes 2 No
Q9	Highest Qualification	High_Qual	1 Secondary Education 2 Post-Secondary Education 3 Vocational Qualification 4 Undergraduate degree (BA, BSc etc) 5 Post-graduate Degree (MA, MSc, etc) 6 Doctorate (PhD) 7 Other
	Other Highest Qualification	High_Qual_Other	

Q	Variable	SPSS Variable Name	Coding Instructions
Q10	Gender	Gender	1 Male 2 Female 3 Transgender Male 4 Transgender Female 5 Gender variant/Non-conforming 6 Not listed 7 Prefer not to answer
Q11	Year of Birth	Year_Birth	1 1970 - 1979 2 1980 -1989 3 1990 - 1999 4 2000+ 5 Other
Q12	Age	Age	

Q	Variable	SPSS Variable Name	Coding Instructions				
Q13	Nationality	Nationality	1 Afghan	17 Danish (Dane)	33 Haitian	49 Moroccan	65 Swedish
			2 American	18 Dominican	34 Honduran	50 New Zealander	66 Swiss
			3 Argentine/ Argentinian	19 Dutch	35 Indonesian	51 Nicaraguan	67 Taiwanese
			4 Australian	20 Ecuadorian	36 Iranian	52 Norwegian	68 Tajik
			5 Belgian	21 Egyptian	37 Irish	53 Panamanian	69 Thai
			6 Bolivian	22 Salvadorian	38 Israeli	54 Paraguayan	70 Turkish
			7 Brazilian	23 English	39 Italian	55 Peruvian	71 Ukrainian
			8 British	24 Estonian	40 Japanese	56 Polish	72 Uruguayan
			9 Cambodian	25 Ethiopian	41 Jordanian	57 Portuguese	73 Venezuelan
			10 Cameroonian	26 Filipino	42 Kenyan	58 Puerto Rican	74 Vietnamese
			11 Canadian	27 Finnish	43 Laotian	59 Romanian	75 Welsh
			12 Chilean	28 French	44 Latvian	60 Russian	76 Other
			13 Chinese	29 German	45 Lebanese	61 Saudi	
			14 Colombian	30 Ghanaian	46 Lithuanian	62 Scottish	
			15 Costa Rican	31 Greek	47 Malaysian	63 Korean	
			16 Cuban	32 Guatemalan	48 Mexican	64 Spanish	

Q	Variable	SPSS Variable Name	Coding Instructions
Q13	Other	Nationality_Other	
Q14	English as first language	English_First	1 Yes 2 No
Q15	Current living situation	Living_Situation	1 With parents/caretaker 2 Living in own home 3 University halls/accommodation 4 Private accommodation 5 Other
Q15	Other		
	Other living situation	Living_Situation_Other	
Feedback Variables			
	Demographic Understanding	Demo_Understanding	Text
		Demo_Confuse	1=Yes, 2=No
		Demo_Confuse_Details	Text

## I.2 Scale variables

### Likert Scale

1=strongly agree, 2 = agree, 3 = somewhat agree, 4 = neither agree nor disagree, 5 = somewhat agree, 6 = disagree, 7 = strongly disagree

Unless specifically stated, all variables below are coded according to the likert scale above

Q	Variable	SPSS Variable Name	Coding Instructions
	Application/Starting College	Apply_	
1	I was attracted to the course and University/College because of the social media and website content about the University/College	Apply_SMWB	Likert
2	If it wasn't for my old friends, I don't think I would have applied to this course	Apply_Oldfriends	Likert
3	I found it easy to make the decision to apply to this course	Apply_EasyDecision	Likert
4	I opted to apply for a course that I knew I would get instead of challenging myself to do better	Apply_NoChallenge	Likert
5	I chose this University/College because of it's size	Apply_Size	Likert
	Apply Feedback	Apply_Understanding	Text
		Apply_Confuse	1=Yes, 2=No
		Apply_Confuse_Details	Text

Q	Variable	SPSS Variable Name	Coding Instructions
	Difference between school and College	Diff_	
6	I find that University/College is the first place where you have to start fending for yourself	Diff_Fending	Likert
7	I find that I do not have any spare time since starting University/College	Diff_Time	Likert
8	The timetable of lectures is hard to get used to in University/College	Diff_Timetable	Likert
9	I like that University/College is not as strict as school	Diff_Strict	Likert
10	The social life in University/College is not what I thought it would be	Diff_Social	Likert
11	I find budgeting very difficult when at University/College	Diff_Budget	Likert
12	I have to make financial choices between living and socialising	Diff_Choice	Likert
13	I found it very stressful trying to find suitable accommodation	Diff_Accom	Likert
14	I feel left out because I don't have the money to socialise	Diff_Money_Social	Likert
15	I feel left out of the University/College social life because I live at home	Diff_Live_Home	Likert
16	I need to be organised at home so that I can attend University/College	Diff_Organised	Likert
17	I need to work so that I can attend University/College	Diff_Work	
	Difference Feedback	Diff_Understanding	Text
		Diff_Confuse	1=Yes, 2=No
		Diff_Confuse_Details	Text

Q	Variable	SPSS Variable Name	Coding Instructions
	University/College Social Media	UCSM_	
18	Social media and/or instant messaging makes me feel included in the University/College environment	UCSM_Include	
19	I think that the University/College connects with students by using online social media and instant messaging platforms	UCSM_Connect	
20	The University/College did not let us know about the online groups before induction	UCSM_Induction	
21	Social media and/or instant messaging instils a sense of community in the class	UCSM_Community	
22	I felt excluded from the class group because I did not know about the course social media page in advance of starting	UCSM_Exclude	
23	I feel that it is easier to get a group discussion going in online group chats than face to face	UCSM_Discussion	
24	I find it difficult to contribute to online group chats with University/College friends	UCSM_Contribution	
25	I think that email is an ineffective form of communication	UCSM_Email	
26	I find that Instant messaging is the easiest way to communicate with my classmates	UCSM_Classmates	
27	I feel that social media and/or instant messaging serves as a communal point for the class as the years progress	UCSM_Communal	
	UCSM Feedback	UCSM_Understanding	Text
		UCSM_Confuse	1=Yes, 2=No
		UCSM_Confuse_Details	Text

Q	Variable	SPSS Variable Name	Coding Instructions
	University/College Friends	UCFriends	
28	I worry that I won't fit in with my classmates	UCFriends_Fitin	
29	If I had more University/College friends, I would love the course more	UCFriends_More	
30	I enjoy my University/College experience because of my college friends	UCFriends_Experience	
31	I would make more friends if the class size was smaller	UCFriends_Class_Size	
32	I would not continue on the course if I had not made any friends in University/College	UCFriends_Stay	
33	I'm lucky to be on a course that I enjoy	UCFriends_Lucky	
34	My friends in University/College make it so much easier to get up in the morning	UCFriends_Easier	
35	I feel that the worst part of starting a new course, is going in and sitting on your own	UCFriends_Make_Friends	
	UCSM Feedback	UCFriends_Understanding	Text
		UCFriends_Confuse	1=Yes, 2=No
		UCFriends_Confuse_Details	Text



Q	Variable	SPSS Variable Name	Coding Instructions
	Making New Friends	New_	
	I find it difficult to make friends		
36	on my course	New_Difficult	
	I feel like I am the only one with		
37	no University/College friends	New_NoFriends	
	I have spoken to everyone on the		
38	course	New_Everyone	
	I find that it's easy to be lonely in		
39	University/College	New_Lonely_Easy	
	The class size made it easier to		
40	speak to people	New_Class_Size	
41	I feel lonely in a large class	New_Lonely_Class	
42	I feel lonely at University/College	New_Lonely_UC	
	I see the same people everyday		
43	in University/College	New_Same	
	I feel that none of the people I		
	have met in University/College like		
44	me	New_Unpopular	
	I have no one to talk to at		
45	University/College	New_No_Talk	
	I feel that my classmates don't		
46	know me	New_Not_Know_Me	
	I don't know how to go up to my		
47	classmates and get to know them	New_Get_To_Know	
	I feel that I don't know my		
48	classmates	New_Not_Know_Classmates	
	I find it hard to make new friends		
49	as an adult	New_Adult	
	New Feedback	New_Understanding	Text
		New_Confuse	1=Yes, 2=No
		New_Confuse_Details	Text

Q	Variable	SPSS Variable Name	Coding Instructions
	University/College friends and social media	UCFSM_	
	I feel that I would not have gotten to know my classmates initially, if it wasn't for social media and/or		
50	instant messaging	UCFSM_Initial	
	I prefer to chat face to face than via social media and instant messaging with my		
51	University/College friends	UCFSM_F2F	
	I feel that I get to know my classmates better when I am		
52	friends with them on social media	UCFSM_Know	
	I see my college friends a lot so I don't feel the need to talk to them		
53	online	UCFSM_See_F2F	
	I feel that I would miss out on a social life if I didn't have social		
54	media accounts	UCFSM_Social	
	I find that online interaction makes face to face social		
55	interactions easier	UCFSM_Easier	
	My classmates are my friends on social media and/or instant		
56	messaging	UCFSM_Both	
	When I met my new friends in University/College, we created an		
	online group chat exclusive to our		
57	group	UCFSM_Exclusive	
	I feel excluded when I am not part of my classmates social online		
58	group chats	UCFSM_Excluded	
	University/College friends and social media Feedback	UCFSM_Understanding	Text
		UCFSM_Confuse	1=Yes, 2=No
		UCFSM_Confuse_Details	Text

Q	Variable	SPSS Variable Name	Coding Instructions
	University/College friends and support	UCFSUP_	
	The online college group chat calms me down at times of		
59	assignments or exams	UCFSUP_Calm	
	I find that there will always be someone to say "you can do this"		
60	in the online group chats	UCFSUP_Encouragement	
	I feel that I should be anxious when I see in the online group chats that classmates are getting		
61	anxious about exams or assignments	UCFSUP_Anxiety	
	I find that it's easy to complain about the course or institute in		
62	online group chats	UCFSUP_Complain	
	I feel anxious if there is no reply		
63	to my online messages	UCFSUP_Reply	
	I would not go into a lecture		
64	without my friends	UCFSUP_Attendance	
	I can see online that I am not the only one struggling with		
65	assignments	UCFSUP_Assignments	
	I prefer to hang out with my friends on campus than to go		
66	home after lectures	UCFSUP_Social	
	The friendships that I have in		
67	college have changed my life	UCFSUP_Significant	
	I would not be happy coming to University/College without the		
68	friends that I have met here	UCFSUP_Dependence	
	University/College friends and support Feedback	UCFSUP_Understanding	Text
		UCFSUP_Confuse	1=Yes, 2=No
		UCFSUP_Confuse_Details	Text

Q	Variable	SPSS Variable Name	Coding Instructions
	Academic Work - Online Group	AWOG_	
69	Group work helped me meet new friends in my class	AWOG_Groupwork	
70	I feel that it is necessary to create an online group chat to complete a group work assignment	AWOG_Assignment	
71	I find that online group chats are really useful for group work in college	AWOG_Benefits	
72	I feel that online group chats distract me from college work	AWOG_Distract	
73	I prefer to use group chats than face to face meetings when working on college assignments	AWOG_Prefer	
74	I find that face to face conversations or phone calls regarding University/College work, take up too much of my time	AWOG_F2FTime	
75	Online group chats relieve the stress of group work	AWOG_Relieve	
76	It takes longer to communicate about group work with classmates on group chats than face to face meetings	AWOG_Longer	
77	I don't see a bad side to using group chats for college work	AWOG_Positive	
	Academic Work - Online Group Feedback	AWOG_Understanding AWOG_Confuse AWOG_Confuse_Details	Text 1=Yes, 2=No Text

Q	Variable	SPSS Variable Name	Coding Instructions
	Independent Learning	IL_	
78	I find it hard to do work on my own initiative	IL_Initiative	
79	I find it demotivating when there is no one to tell me to do my work	IL_Demotiv	
80	I find it difficult to complete assignments on time because no one is actively looking for my work	IL_CompleteWork	
81	I find it difficult to get used to the fact that I am responsible for my own learning	IL_Responsibility	
82	I find it difficult to motivate myself to attend because no one is taking attendance	IL_Motivate	
83	I understand the work that I have to do	IL_Understanding	
84	I feel like I moved from an environment where I got a lot of help, to an environment where I have to do everything for myself	IL_Independent	
85	I have to do a lot of work to make sense of the assignments	IL_HardWork	
86	I am really nervous that I will not be good at the assignments	IL_Confidence	
87	I know that I will be successful on the course	IL_Success	
88	I feel very nervous when I think about exams	IL_Anxiety	
	Independent Learning Feedback	IL_Understanding IL_Confuse IL_Confuse_Details	Text 1=Yes, 2=No Text

Q	Variable	SPSS Variable Name	Coding Instructions
	Old Friends - Keeping in Touch	OF_	
	I would feel out of touch with my old friends without social media		
89	and/or instant messaging	OF_Outof Touch	
	I feel that social media reinforces the fact that my old friends are making new friends without me	OF_NewFriends	
90	I use social media and instant messaging to stay in touch with old friends who moved away	OF_StayTouch	
91	I use instant messaging and social media to keep track of what my old friends are doing	OF_KeepTrack	
	I would feel disconnected with my life outside of University/College, if I didn't have instant messaging or social media	OF_Disconnect	
93	I keep in touch with my old friends through social media and instant messaging more so than face to face	OF_Online	
94	I feel included when I am part of my old friends' new online group chats	OF_Include	
95	I want to be included in my old friend's group chats	OF_Belong	
96	I always add my old friends to my new online friends' group chat	OF_NewGroups	
97	I want to see what my old friends are doing without me	OF_NewLife	
98	I find that my old friends are difficult to contact	OF_NoContact	
99			
	Old Friends - Keeping in Touch Feedback	OF_Understanding	Text
		OF_Confuse	1=Yes, 2=No
		OF_Confuse_Details	Text

Q	Variable	SPSS Variable Name	Coding Instructions
	Old friends - developing friendship	OFDF_	
100	I feel that I am missing out when I see my old friends' social media updates	OFDF_Exclude	
101	I feel happy when I see my old friends tagged on social media posts with their new group of friends	OFDF_Happy	
102	From what I see on Social media and instant messaging, I feel that my old friends have a much better social life in University/College than I do	OFDF_Envy	
103	I feel left out when I realise that my old friends are making new friends in University/College	OFDF_LeftOut	
104	I feel that my old friends are envious of the friends I've made in University/College	OFDF_Jealous	
105	I find that conversation gets boring when I only see my old friends on social media	OFDF_Boring	
106	I feel that I miss out on social events when I am not part of an online group chat	OFDF_Belong	
107	I feel that my friends are with me when I am chatting to them online	OFDF_Present	
108	I find that it's more awkward to re- message an old friend than it is to message a new friend on social media	OFDF_Contact	
109	When I get frustrated in University/College, I vent to my old friends online	OFDF_Vent	
	Old friends - developing friendship - Feedback	OFDF_Understanding OFDF_Confuse OFDF_Confuse_Details	Text 1=Yes, 2=No Text

Q	Variable	SPSS Variable Name	Coding Instructions
	Time for old friends	TOF_	
	I want to meet my old friends, face to face, to just sit down and		
110	talk	TOF_F2F	
	I feel that my old friends' new groups are more important to		
111	them than I am	TOF_Rejected	
	I miss my old friends if I don't		
112	see them	TOF_Miss	
	I don't have time to see my old		
113	friends	TOF_Time	
	I don't see my old friends as often		
114	as I would like	TOF_NotOfTen	
	It's hard to see my old friends because University/College is so		
115	busy	TOF_Hard	
	I wish I chose the same career/academic path as my old		
116	friends	TOF_Different	
	I feel that my old friends don't		
117	have time to see me	TOF_NoTime	
	It upsets me when I see online that my old friends are meeting		
118	up without me	TOF_Exclude	
	I feel that I am missing out on the University/College social life		
119	because my life is so busy	TOF_Busy	
	Time for Old Friends - Feedback	TOF_Understanding	Text
		TOF_Confuse	1=Yes, 2=No
		TOF_Confuse_Details	Text



Q	Variable	SPSS Variable Name	Coding Instructions
	Motivation and Competition	MC_	
	Online group chats keep me motivated to push myself further		
120	in my work	MC_OnlineGroup	
	When I tell friends that I am studying or doing college work, it		
121	motivates me to complete it	MC_Complete	
	I see my old friends having a great time online, and wish that I didn't have to go to		
122	University/College	MC_Social	
	I see what my friends/family are doing and that motivates me to		
123	continue	MC_KeepUp	
	My old friends make me feel that I'm doing well at		
124	University/College	MC_Reassurance	
	I see my friends progressing their studies and it motivates me		
125	to keep going with mine	MC_Progress	
	Time for Old Friends - Feedback	MC_Understanding	Text
		MC_Confuse	1=Yes, 2=No
		MC_Confuse_Details	Text

Q	Variable	SPSS Variable Name	Coding Instructions
	Online Etiquette	OE_	
	I occasionally unfriend old friends		
126	on social media	OE_Unfriend	
	Sometimes, I feel under pressure		
	by my old friends to make		
127	announcements on social media	OE_Pressure	
	I only post to groups on social		
	media sites as opposed to public		
128	posts	OE_Private	
	I think it's socially acceptable		
	when friends refer to my social		
129	media posts in conversation	OE_SocialNorms	
	I find that that I have a shared		
	interest with people who I have		
130	met online	OE_OnlineFriends	
	I use social media and/or instant		
	messaging to keep in touch with		
131	family members	OE_KeepInTouch	
	I prefer to phone family members		
132	or speak to them face to face	OE_PrivateF2F	
	I think it's intrusive when friends		
	refer to my social media posts on		
133	other social media platforms	OE_Intrusive	
	I like to see if my friends have		
134	seen my online message	OE_Confirmation	
	I think it's rude when people do		
135	not reply to online messages	OE_Rude	
	I frequently check my phone for		
136	messages	OE_Frequency	
	I like to respond to a message as		
137	soon as I see it	OE_Response	
	I try to keep online messaging to		
138	a minimum	OE_Minimum	
	All organisation for meeting up		
139	happens online	OE_Organisation	
	Online Etiquette Feedback	OE_Understanding	Text
		OE_Confuse	1=Yes, 2=No
		OE_Confuse_Details	Text

Q	Variable	SPSS Variable Name	Coding Instructions
	Online Trust	OT_	
	I find it easier to have online only		
140	friends	OT_Only	
	I have online friends who I		
	message but have never spoken		
141	to them face to face	OT_NotF2F	
	I feel that I cannot have the same		
	emotional connection with online		
	friends through messaging or		
142	social media	OT_NoConnect	
	My online only friends are mutual		
143	friends	OT_Mutual	
	I have online friends who I do not		
144	communicate with	OT_NoComms	
	I confide in my online only friends		
145	when I feel frustrated	OT_Confide	
	I'm not as close with online only		
146	friends	OT_NotClose	
	I only add friends online after I've		
147	met them face to face	OT_PrevMet	
	Online Trust Feedback	OT_Understanding	Text
		OT_Confuse	1=Yes, 2=No
		OT_Confuse_Details	Text

Q	Variable	SPSS Variable Name	Coding Instructions
	Online Interpretation	OI_	
	I feel it's hard to gauge reactions		
148	online	OI_Guage	
149	I feel like I censor myself online	OI_Censor	
	My online messages can be		
150	misinterpreted	OI_Misinterpreted	
	I find that sarcasm is difficult to		
151	interpret online	OI_Sarcasm	
	I find that it's much easier to		
	express emotion on the phone		
	than on social media or instant		
152	messaging	OI_Emotion	
	I find that people are easily		
153	offended online	OI_Offend	
	I find that it's hard to get my point		
154	across in group chats	OI_Misunderstood	
	I prefer using video chat so that I		
155	can see the person I am talking to	OI_Visual	
	I prefer to use voice notes instead		
	of instigating a discussion in		
156	online group chats	OI_ASynchronous	
	I feel awkward when people do		
	not respond to my texts on group		
157	chat	OI_Exclude	
	Online Interpretation Feedback	OI_Understanding	Text
		OI_Confuse	1=Yes, 2=No
		OI_Confuse_Details	Text

Q	Variable	SPSS Variable Name	Coding Instructions
	Negative Incidents Online	NI_	
	Sometimes I feel uncomfortable with content on group chats with		
158	old friends	NI_OFChat	
	Sometimes I feel uncomfortable with content on group chats with		
159	University/College friends	NI_UCChat	
	It upsets me when an online negative incident carries over into		
160	face to face interaction	NI_OnlineF2F	
	A negative online experience made me feel unwelcome in		
161	University/College	NI_Unwelcome	
	I feel powerless when there is a		
162	negative online experience	NI_Powerless	
	On at least one occasion, negative behaviour by others prompted me to leave online groups on social media and/or		
163	group chats	NI_ExitGroup	
	Negative Incidents Online Feedback	NI_Understanding	Text
		NI_Confuse	1=Yes, 2=No
		NI_Confuse_Details	Text

Q	Variable	SPSS Variable Name	Coding Instructions
	Sense of Belonging	SB_	
	I find that the lecturers are helpful		
164	when it comes to college work	SB_Lecturers	
	It's easier to send an email to a		
165	lecturer than to talk to them	SB_Communication	
	I feel that during the day, there is		
	nothing keeping me here once		
166	lectures are finished	SB_NoInterest	
	I sometimes go to my old friends'		
	University/College and stay there		
167	for the rest of the day	SB_StaywithOF	
	I just go to lectures and then go		
168	home	SB_Onlylectures	
	I feel that the University/College		
169	social life is non-existent	SB_NoSocial	
	I think that clubs and Societies		
170	are promoted well online	SB_Promotion	
	I think there is an over-reliance		
	on digital communication from the		
171	University/College	SB_Digital	
	Sense of Belonging Feedback	SB_Understanding	Text
		SB_Confuse	1=Yes, 2=No
		SB_Confuse_Details	Text

## Appendix J

### Chapter five: Student college adjustment scale – 76 items

Thank you for taking part in this study. You are required to answer all questions in this questionnaire as honestly as you can. Please don't dwell too long on any given answer. There is no time limit for the study, but we don't envisage it taking longer than 60 minutes.

***For Section A, please put a tick (✓) in the box next to the answer of your choice or write in the space provided.***

***For Section B, please select for a scale of 1 to 7 and write the most appropriate number beside the question. In addition, please answer the feedback questions at the end of each block.***

\*\*\*\*\*

#### Section A - Demographic Information

In this part of the study, we would just like to know a little more about you. Please remember that all of this information is handled confidentially and will not be linked back to individuals.

1 Please state the name of the University or College you currently attend:  
(e.g. University of Wolverhampton; IADT)

\_\_\_\_\_

2 Please state the country of the University or College you currently attend:  
(e.g. Great Britain, Ireland)

\_\_\_\_\_

3 What is the name of the course you are currently attending (e.g. Bachelor of Business (Hons) in Entrepreneurship, Bachelor of Science (BSc) (Hons) in Psychology etc.)?

\_\_\_\_\_

4 What year of study are you currently attending (*please note that some courses do not have a 4<sup>th</sup> year*):

1<sup>st</sup> ☐ 2<sup>nd</sup> ☐ 3<sup>rd</sup> ☐ 4<sup>th</sup> ☐

5 Are you currently an undergraduate student?

Yes ☐ No ☐

6 Did you attend this course straight after finishing school?

Yes ☐ No ☐

6a.

If no, what did you do in the interim?

Attended  
another  
course ☐

Travelled ☐

Worked full-  
time ☐

Worked  
Part-time ☐

Other  
(please  
specify) ☐

7 Are you a mature student?

(i.e. did you start studying in this course when you were over the age of 23)

Yes ☐ No ☐

8 Was this course your first choice?

Yes ☐ No ☐

9 What is the highest degree or level of school you have completed?

Secondary Education <input type="checkbox"/>	Post- Secondary Education <input type="checkbox"/>	Vocational Qualification <input type="checkbox"/>	Undergraduate Degree (BA, BSc etc.) <input type="checkbox"/>
graduate Degree (MA, MSc <input type="checkbox"/>	Doctorate (PhD) <input type="checkbox"/>	Other (Please specify) <input type="checkbox"/>	

10 To which gender do you most identify?

Female <input type="checkbox"/>	Male <input type="checkbox"/>	Transgende r Male <input type="checkbox"/>	Transgender Female <input type="checkbox"/>
Gender variant/Non- conforming <input type="checkbox"/>	Not Listed <input type="checkbox"/>	Prefer not to answer <input type="checkbox"/>	

11 Year of Birth and age (in years) last birthday:

Year	<input type="text"/>
Age	<input type="text"/>



12 What is your nationality? Please select one from the list.

Afghan	Danish (Dane)	Haitian	Moroccan	Swedish
American	Dominican	Honduran	New Zealander	Swiss
Argentine/Argentinian	Dutch	Indonesian	Nicaraguan	Taiwanese
Australian	Ecuadorian	Iranian	Norwegian	Tajik
Belgian	Egyptian	Irish	Panamanian	Thai
Bolivian	Salvadorian	Israeli	Paraguayan	Turkish
Brazilian	English	Italian	Peruvian	Ukrainian
British	Estonian	Japanese	Polish	Uruguayan
Cambodian	Ethiopian	Jordanian	Portuguese	Venezuelan
Cameroonian	Filipino	Kenyan	Puerto Rican	Vietnamese
Canadian	Finnish	Laotian	Romanian	Welsh
Chilean	French	Latvian	Russian	Other
Chinese	German	Lebanese	Saudi	
Colombian	Ghanaian	Lithuanian	Scottish	
Costa Rican	Greek	Malaysian	Korean	
Cuban	Guatemalan	Mexican	Spanish	

13 Is English your first language?

Yes

☐

No

☐

14 What is your current living situation?

With  
parents/caretaker

☐

Living in  
own home

☐

University  
halls/accommodation

☐

Private  
Accommodation

☐

Other  
(please

\_\_\_\_\_

## Section B – College Adjustment and Online Behaviour Questionnaire

### ***Questionnaire Instructions***

In this part of the study, we would like to learn more about your university/college experiences. Please take a look at each statement and rate it on a scale of 1 (strongly agree) to 7 (strongly disagree). Again, please go with your first response and don't spend too long deliberating each question.















## Appendix K

### Chapter five: College Adjustment Test (Pennebaker et al., 1990)

#### K.1 CAT scale

Within the LAST WEEK, to what degree have you:		Not at all			Somewhat		A great deal	
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	Missed your friends from high school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	Missed your home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	Missed your parents and other family members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	Worried about how you will perform academically at college	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	Worried about love or intimate relationships with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	Worried about the way you look	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	Worried about the impression you make on others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	Worried about being in college in general	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	Liked your classes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10	Liked your roommate(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11	Liked being away from your parents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12	Liked your social life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13	Liked college in general	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14	Felt angry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15	Felt lonely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16	Felt anxious or nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17	Felt depressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18	Felt optimistic about your future at college	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19	Felt good about yourself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

#### K.2 Scoring key

Positive affect =  $q9+q10+q12+q13+q18+q19$

Negative affect =  $q4+q5+q6+q7+q8+q14+q15+q16+q17$

Homesickness =  $q1+q2+q3+q15+q16+(8-q11)$

Overall adjustment =  $(64-(q1+q2+q3+q4+q5+q6+q7+q8))+q9+q10+q11+q12+q13+(32-(q14+q15+q16+q17))+q18+q19$

## Appendix L

### Chapters five and six: Ethics approval documentation

#### L.1 IADT Institute research ethics committee statement



IADT Institute Research Ethics Committee

Statement of Ethical Approval

**Title of project:** The role of Online Friendships in College Adjustment

**Name of researchers:** Audrey Stenson

This project has been considered using agreed IADT procedures and is now approved.

Signed: \_\_\_\_\_

Dr Elaine Sisson

*(Chair, IADT Institute Research Ethics Committee)*

Date: 08 October 2019

#### Notes

- 1) Research proposals can only receive provisional approval from the Institute Research Ethics Committee in the absence of approval from any agency where you intend to recruit participants.

- 2) Where your application for ethical approval is rejected, you or your supervisor will be informed. The grounds for refusal will be outlined and will have to be addressed in your re-submission.
- 3) Approved proposals will be retained in IADT for 5 years after the research has been completed.

## L.2 University of Wolverhampton ethical approval



### **Re: Minor Amendments to Study**

27<sup>th</sup> September 2019

Audrey Stenson

University of Wolverhampton

Faculty of Education, Health & Wellbeing

Dear Audrey

**Re: *An Exploration of the Role of Private and Public Online Friendships in College Adjustment and Persistence in College* submitted to The Faculty of Education, Health and Wellbeing Ethics Panel (Health Professions, Psychology, Social Work & Social Care)**

The Faculty Ethics Panel (Health Professions, Psychology, Social Work & Social Care) has considered and reviewed your proposed minor amendments submitted on 24<sup>th</sup> September 2019.

On review your Revised Research Proposal was passed and the Panel believes that the ethical issues inherent in your study remain adequately considered and addressed. Therefore the Panel is giving you full ethical approval for your revised study (**Code 1 - Approved**). We would like to wish you every success with the project.

Yours sincerely

***Angela Clifford***

*Dr Angela Clifford (BSc, MSc, PhD, FHEA)*

Chair – Ethics Panel

## Appendix M

### Chapter five: Amos modifications and explanations

#### M.1 Modifications within the same factor

The following subsections are based upon high modification indexes as listed in the Amos output file. See Table M.8 for model fit statistics after each post-hoc modification.

##### ***M.1.1 TOF\_Miss and TOF\_F2F***

The standardised residual is greater than 2.58, the low regression weight and the similarity in item content, TOF\_Miss was removed from the model (see Table M.1).

Table M.1

*Modification Indices for TOF\_Miss and TOF\_F2F*

Obs Var	Latent Var	Err	M. I.	Par Chg	Reg Wght	Std Residuals	Content Overlay
TOF_Miss	F1SC	16	69.02	0.85	0.31	7.351	"I miss my old friends when I don't see them"
TOF_F2F	F1SC	30	69.02	0.85	0.32	7.351	"I want to meet my old friends, face to face, just to sit down and talk"

##### ***M.1.2 OF\_Belong and OF\_Newlife***

Considering the high standardised residual correlation, low regression weights, and similar item content, removing OF\_NewLife was explored but the model fit statistics did not improve. Instead the errors were covaried (see Table M.2).

Table M.2

*Modification Indices for OF\_Belong and OF\_Newlife*

Obs Var	Latent Var	Err	M. I.	Par Chg	Reg Wght	Std Residuals	Content Overlay
OF_Belong	F1SC	17	54.72	1.13	0.37	6.376	"I want to be included in my old friends group chats"
OF_Newlife	F1SC	19	54.72	1.13	0.32	6.376	"I want to see what my old friends are doing without me"

***M.1.3 OF\_Belong and TOF\_F2F***

TOF\_F2F has very low regression weight  $< .3$ , the standardised residual between the variables exceeds 2.58 and the item content could be construed as similar to participants with regard to wanting to be included in their old friends lives. TOF\_F2F was removed from the model (see Table M.3).

Table M.3

*Modification Indices for OF\_Belong and TOF\_F2F*

Obs Var	Latent Var	Err	M. I.	Par Chg	Reg Wght	Std Residuals	Content Overlay
OF_Belong	F1SC	17	34.15	0.59	0.35	6.095	"I want to be included in my old friends group chats"
TOF_F2F	F1SC	30	34.15	0.59	0.29	6.095	"I want to meet my old friends, face to face, just to sit down and talk"

***M.1.4 OF\_Include and OF\_Belong***

The standard residual correlation between the two variables is high, and the item content is similar (see Table M.4). The errors were covaried to improve on model fit statistics.

Table M.4

*Modification Indices for OF\_Include and OF\_Belong*

Obs Var	Latent Var	Err	M. I.	Par Chg	Reg Wght	Std Residuals	Content Overlay
OF_Include	F1SC	6	26.05	0.58	0.38	4.844	"I feel included when I am part of my old friends new group chats"
OF_Belong	F1SC	17	26.05	0.58	0.33	4.844	"I want to be included in my old friends group chats"

### ***M.1.5 OF\_Disconnect and OF\_OutofTouch***

The standard residual correlation is  $> 2.58$  and the item content is similar and could be construed as such by the participants. The errors were covaried because both were  $>.4$  regression weight (see Table M.5).

Table M.5

#### ***Modification Indices for OF\_Disconnect and OF\_OutofTouch***

Obs Var	Latent Var	Err	M. I.	Par Chg	Reg Wght	Std Residuals	Content Overlay
OF_Disconnect	F1SC	1	26.415	0.43	0.48	3.39	"I would feel disconnected with my life outside of University/College if I didn't have instant messaging or social media"
OF_OutofTouch	F1SC	2	26.415	0.43	0.58	3.39	"I would feel out of touch with my old friends without social media and/or instant messaging"

### ***M.1.6 UCFSM\_Easier and UCFSM\_Know***

The standardised residual correlation exceeds 2.58, the item content is similar and could be construed as such by the participants. The regression is more than .4, therefore the errors will be covaried (see Table M.6).

Table M.6

#### ***Modification Indices for UCFSM\_Easier and UCFSM\_Know***

Obs Var	Latent Var	Err	M. I.	Par Chg	Reg Wght	Std Residuals	Content Overlay
UCFSM_Easier	F1SC	5	24.32	0.57	0.44	3.567	"I find that online interactions make face to face interactions easier"
UCFSM_Know	F1SC	10	24.32	0.57	0.52	3.567	"I feel I get to know my classmates better when I am friends with them on social media"

### ***M.1.7 AWOG\_Benefits and AWOG\_Relieve***

The standardised residual correlation exceeds 2.58, the item content is similar and could be construed as such by the participants. The regression is



less than .4, therefore AWOG\_Relieve will be removed from the model (see Table M.7).

*Modification Indices for AWOG\_Benefits and AWOG\_Relieve*

Obs Var	Latent Var	Err	M. I.	Par Chg	Reg Wght	Std Residuals	Content Overlay
AWOG_Benefits	F1SC	12	19.235	0.31	0.39	3.608	"I find that online group chats are really useful for group work in college"
AWOG_Relieve	F1SC	14	19.235	0.31	0.38	3.608	"Online group chats relieve the stress of group work"

Table M.8

*Modifications within the same factor*

Obs Var	Latent Var	#Obs var	Action (Covary or Remove)	$\chi^2$	DF	SRMR	CMIN/DF	CFI	TLI	RMSEA
OT_NoConnect	F5LC	75	Remove	5463.673		.0957	2.035	.633	.621	.062
TOF_Miss	F1SC	74	Remove	5243.555	2612	.0950	2.007	.645	.633	.061
OF_Belong/OF_NewLife	F1SC	74	Covary	5182.835	2611	.0948	1.985	.653	.641	.061
TOF_F2F	F1SC	73	Remove	4959.801	2539	.0945	1.953	.666	.654	.060
OF_Include/OF_Belong	F1SC	73	Covary	4931.917	2538	.0944	1.943	.669	.658	.059
OF_Disconnect/OF_OutOfTouch	F1SC	73	Covary	4904.234	2537	.0943	1.933	.673	.661	.059
UCSFM_Easier/USFSCM_Know	F1SC	73	Covary	4878.833	2536	.0941	1.924	.676	.665	.059
AWOG_Relieve	F1SC	72	Remove	4739.948	2465	.0940	1.923	.681	.669	.059

## **M.2 Modification indices – Regression weights**

In this section, observed variables that cross-load onto more than one factor will be assessed for model modification. The M.I. weight and parameter change, coupled with the regression weight on multiple latent variables will be used to inform a decision regarding cross-loading or removal. Literature from exploratory factor analysis regarding factor loadings and cross-loadings will be referred to (Tabachnik & Fidell, 2013). See Table M.20 for model fit statistics after post-hoc modifications.

### ***M.2.1 UCFriends\_Stay***

Cross loads on F6SI, this factor is concerned with social interactions and how college friends make the college/university experience more enjoyable whereas the target factor F4IS is about developing interpersonal skills in order to adjust to college. Adding a parameter to cross-load the variable results in an improved model fit, see Table N.20. The regression weight for F4IS remains higher at .419 and it is lower for F6SI at .381, there is much debate on whether or not items should be removed due to cross-loading in EFAs (Tabachnik & Fidell, 2013) but because there is very little difference in the regression weights, the cross loading will remain intact for this model (see Table M.20).

Table M.9

*Modification Indices for UCFriends\_Stay*

Target	Cross	M.I.	Par Chg	Reg Weight	Content
F4IS	F6SI	37.21	0.553	0.416	"I would not continue on the course if I had not made any friends in Univeristy/College"

**M.2.2 R\_IL\_Confidence**

After cross loading, the model fit statistics improved but the regression weight on F2SD variable reduced to -.156 with a regression weight of -.397 on F1SC. R\_IL\_Confidence was loaded on F1SC and showed a higher regression weight of -.428. However the factor F1SC is concerned with Social Cohesion so this observed variable was not deemed suitable for this latent variable.

R\_IL\_Confidence was deemed complex and was removed from the model (see Table M.10).

Table M.10

*Modification Indices for R\_IL\_Confidence*

Target	Cross	M.I.	Par Chg	Reg Weight	Content
F2SD	F1SC	35.38	-1.15	-0.229	"I am really nervous that I will not be good at the assignments"

**M.2.3 UCFSM\_Both**

After cross loading the model statistics changed favourably but on reflection of the item content, the item was not deemed suitable to be part of F2SD which is focussed on social difficulties that students may experience. The regression weight on F1SD was .464 and on F2SD was -.330. The cross loading weight was similar which indicates that this could be a complex item and according to literature on

exploratory factor analysis, should be removed from the analysis (see Table M.11).

Removing UCFSM\_Both yielded some improvement on the model fit statistics.

Table M.11

*Modification Indices for UCFSM\_Both*

Target	Cross	M.I.	Par Chg	Reg Weight	Content
F1SC	F2SD	28.62	-0.33	0.394	"my classmates are my friends on social media and instant messaging"

**M.2.4 MCOOnline\_Group**

The item content of MCOOnline\_Group does not match with the latent variable F3OSE which is concerned with online social exclusion, it makes sense that it is cross loading on F1SC because this latent variable contains all observed variables that are concerned with online social cohesion regarding friendships and group work. Cross loading the variable resulted in unfavourable regression weight for F3OSE and the decision was made to move the observed variable from F3OSE to F1SD (see Table M.12). This resulted in favourable changes to the model fit statistics.

Table M.12

*Modification Indices for MCOOnline\_Group*

Target	Cross	M.I.	Par Chg	Reg Weight	Content
F3OSE	F1SC	27.58	0.89	0.172	"Online group chats keep me motivated to push myself further in my work"

### ***M.2.5 UCSM\_Include***

The item content for UCSM\_Include indicates that it is loading on the correct latent variable F1SC. By cross loading on all of the identified latent variables, UCSM\_Include shows low regression weights for all 4 cross loadings and highest on the target latent variable (see Table M.13). However, after removing the cross loadings and given the low regression weight of the observed variable on the target latent variable (factor), this variable will be removed from the model.

Table M.13

#### *Modification Indices for UCSM\_Include*

Target	Cross	M.I.	Par Chg	Reg Weight	Content
F1SC	F2SD	27.58	-0.28	0.172	“Social media and/or instant messaging makes me feel included in the University/College environment”
	F3OSE	23.02	-0.42		
	F6SI	15.58	0.205		
	F4IS	12.26	-0.2		

### ***M.2.6 OFDF\_Jealous***

The item content for OFDF\_Jealous indicates that item could cross load on F6SI because this latent variable contains items that are related to social interactions. When cross-loaded, the observed variable shows low regression weights with F3OSE (.344) and F6SI (.357). The regression weights are similar which indicates a complex variable, in addition the regression weights are < .4 so OFDF\_Jealous will be removed from the model (see Table M.14).

Table M.14

*Modification Indices for OFDF\_Jealous*

Target	Cross	M.I.	Par Chg	Reg Weight	Content
F3OSE	F6SI F2SD	26.54 13.83	0.434 -0.33	0.252	"I feel that my old friends are jealous of the friends I've made in University/College"

***M.2.7 R\_SB\_NoSocial***

This observed variable cross loaded on a latent variable concerned with online social exclusion, this was not a suitable cross loading with regard to the item content. Cross loading the observed variable resulted in regression weights  $< .4$ , therefore the decision was made to remove R\_SB\_NoSocial from the model (see Table M.15).

*Modification Indices for R\_SB\_NoSocial*

Target	Cross	M.I.	Par Chg	Reg Weight	Content
F3OSE	F6SI	26.44	-0.81	0.342	"I feel that the University/College social life is non-existent"

***M.2.8 OI\_Misunderstood***

Considering the item content, it makes sense that the observed variable cross loads on the latent variable for online social exclusion. However, when the item is cross loaded on F3OSE, the regression weights are  $< .4$  (.381 for F3OSE and .187 for F5LC), in addition the variable cross loads on more than one latent variable and is considered complex (see Table M.16). Therefore OI\_Misunderstood will be removed from the model.

Table M.16

*Modification Indices for OI\_Misunderstood*

Target	Cross	M.I.	Par Chg	Reg Weight	Content
F5LC	F3OSE	25.76	0.691	0.287	“I find that it’s hard to get my point across in group chats”
	F4IS	17.36	0.364		
	F2SD	17.71	0.343		

**M.2.9 MC\_Social**

Considering the item content, it makes sense that this variable is cross loading on the latent variable for online social exclusion. MC\_Social was cross loaded to F3OSE and the regression weight for the cross loading was higher (.430 in comparison to .217 on F4IS). The observed variable was then moved to F3OSE and removed from F4IS, this yielded a stronger regression weight at .557 (see Table M.17).

Table M.17

*Modification Indices for MC\_Social*

Target	Cross	M.I.	Par Chg	Reg Weight	Content
F4IS	F3OSE	21.11	0.654	0.435	“I see my old friends having a great time online and wish that I didn’t have to go to University/College”

**M.2.10 TOF\_Exclude**

This variable was cross loaded on F3OSE, the regression weight for F1SC was higher at .365 but F3OSE had a regression weight of .294 which was less than .2 of a difference in cross loading. This variable was deemed complex and removed from the model (see Table M.18).



Table M.18

*Modification Indices for TOF\_Exclude*

Target	Cross	M.I.	Par Chg	Reg Weight	Content
F1SC	F3OSE	15.43	0.57	0.471	"It upsets me when I see that my old friends are meeting up without me"

**M.2.11      *OI\_Guage***

OI\_Guage was cross-loaded on F6SI and yielded an low regression weight for both latent factors (.177 and .250 on F6SI). The decision was made to remove OI\_Guage from the analyses due to the regression weight <.4 (see Table M.19).

Table M.19

*Modification Indices for OI\_Guage*

Target	Cross	M.I.	Par Chg	Reg Weight	Content
F5LC	F6SI	13.49	0.272	0.237	"I feel that its hard to gauge reactions online"

Table M.20

*Modifications across factors*

Obs Var	#Obs var	Target	Crossload	Action (Crossload or Remove)	$\chi^2$	DF	SRMR	CMIN/DF	CFI	TLI	RMSEA
UCFriends_Stay	72	F4IS	F6SI	Crossload	4698.243	2464	.0931	1.907	.687	.675	.058
R_IL_Confidence	71	F2SD	F1SC	Remove	4485.432	2394	.0905	1.874	.700	.689	.057
UCFSM_Both	70	F1SC	F2SD	Remove	4333.733	2325	.0888	1.864	.707	.696	.057
MCOOnline_Group	70	F3OSE	F1SC	Move to F1SC	4299.277	2325	.0869	1.849	.712	.701	.056
UCSM_Include	69	F1SC	F2SD F3OSE F6SI F4IS	Remove	4138.276	2257	.0849	1.834	.718	.707	.056
OFDF_Jealous	68	F3OSE	F6SI F2SD	Remove	4012.576	2190	.0835	1.832	.724	.713	.056
R_SB_NoSocial	67	F6SI	F3OSE	Remove	3813.450	2124	.0813	1.795	.738	.727	.055
OI_Misunderstood	66	F5LC	F3OSE F4IS F2SD	Remove	3669.405	2059	.0792	1.782	.746	.736	.054
MC_Social	66	F4IS	F3OSE	Moved to F3OSE	3645.090	2059	.0777	1.770	.750	.740	.054
TOF_Exclude	65	F1SC	F3OSE	Remove	3509.639	1995	.0768	1.759	.757	.746	.053
OI_Gauge	64	F5LC	F6SI	Remove	3408.588	1932	.0764	1.764	.761	.750	.054

## Appendix N

### Chapter six: The 50-item IPIP representation of the Goldberg (1992) markers for the Big-Five factor structure

#### N.1 IPIP scale

##### How Accurately Can You Describe Yourself?

Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence. Indicate for each statement whether it is 1. Very Inaccurate, 2. Moderately Inaccurate, 3. Neither Accurate Nor Inaccurate, 4. Moderately Accurate, or 5. Very Accurate as a description of you.

	Very Inaccurate	Moderately Inaccurate	Neither Accurate nor Inaccurate	Moderately Accurate	Very Accurate
1 Am the life of the party.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2 Feel little concern for others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3 Am always prepared.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4 Get stressed out easily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5 Have a rich vocabulary.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6 Don't talk a lot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7 Am interested in people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8 Leave my belongings around.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9 Am relaxed most of the time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10 Have difficulty understanding abstract ideas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11 Feel comfortable around people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12 Insult people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13 Pay attention to details.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14 Worry about things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15 Have a vivid imagination.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16 Keep in the background.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17 Sympathize with others' feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18 Make a mess of things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

			Neither Accurate nor	Moderately Accurate	Very Accurate
	Very Inaccurate	Moderately Inaccurate	Inaccurate		
19 Seldom feel blue.	0	0	0	0	0
20 Am not interested in abstract ideas.	0	0	0	0	0
21 Start conversations.	0	0	0	0	0
Am not interested in other people's					
22 problems.	0	0	0	0	0
23 Get chores done right away.	0	0	0	0	0
24 Am easily disturbed.	0	0	0	0	0
25 Have excellent ideas.	0	0	0	0	0
26 Have little to say.	0	0	0	0	0
27 Have a soft heart.	0	0	0	0	0
Often forget to put things back in their					
28 proper place.	0	0	0	0	0
29 Get upset easily.	0	0	0	0	0
30 Do not have a good imagination.	0	0	0	0	0
Talk to a lot of different people at					
31 parties.	0	0	0	0	0
32 Am not really interested in others.	0	0	0	0	0
33 Like order.	0	0	0	0	0
34 Change my mood a lot.	0	0	0	0	0
35 Am quick to understand things.	0	0	0	0	0
36 Don't like to draw attention to myself.	0	0	0	0	0
37 Take time out for others.	0	0	0	0	0
38 Shirk my duties.	0	0	0	0	0
39 Have frequent mood swings.	0	0	0	0	0
40 Use difficult words.	0	0	0	0	0
Don't mind being the center of					
41 attention.	0	0	0	0	0
42 Feel others' emotions.	0	0	0	0	0
43 Follow a schedule.	0	0	0	0	0
44 Get irritated easily.	0	0	0	0	0
45 Spend time reflecting on things.	0	0	0	0	0
46 Am quiet around strangers.	0	0	0	0	0
47 Make people feel at ease.	0	0	0	0	0
48 Am exacting in my work.	0	0	0	0	0
49 Often feel blue.	0	0	0	0	0
50 Am full of ideas.	0	0	0	0	0

## N.2 Scoring keys

1 Am the life of the party.	(1+)	26 Have little to say.	(1-)
2 Feel little concern for others.	(2-)	27 Have a soft heart.	(2+)
3 Am always prepared.	(3+)	28 Often forget to put things back in their proper place.	(3-)
4 Get stressed out easily.	(4-)	29 Get upset easily.	(4-)
5 Have a rich vocabulary.	(5+)	30 Do not have a good imagination.	(5-)
6 Don't talk a lot.	(1-)	31 Talk to a lot of different people at parties.	(1+)
7 Am interested in people.	(2+)	32 Am not really interested in others.	(2-)
8 Leave my belongings around.	(3-)	33 Like order.	(3+)
9 Am relaxed most of the time.	(4+)	34 Change my mood a lot.	(4-)
10 Have difficulty understanding abstract ideas.	(5-)	35 Am quick to understand things.	(5+)
11 Feel comfortable around people.	(1+)	36 Don't like to draw attention to myself.	(1-)
12 Insult people.	(2-)	37 Take time out for others.	(2+)
13 Pay attention to details.	(3+)	38 Shirk my duties.	(3-)
14 Worry about things.	(4-)	39 Have frequent mood swings.	(4-)
15 Have a vivid imagination.	(5+)	40 Use difficult words.	(5+)
16 Keep in the background.	(1-)	41 Don't mind being the center of attention.	(1+)
17 Sympathize with others' feelings.	(2+)	42 Feel others' emotions.	(2+)
18 Make a mess of things.	(3-)	43 Follow a schedule.	(3+)
19 Seldom feel blue.	(4+)	44 Get irritated easily.	(4-)
20 Am not interested in abstract ideas.	(5-)	45 Spend time reflecting on things.	(5+)
21 Start conversations.	(1+)	46 Am quiet around strangers.	(1-)
22 Am not interested in other people's problems.	(2-)	47 Make people feel at ease.	(2+)
23 Get chores done right away.	(3+)	48 Am exacting in my work.	(3+)
24 Am easily disturbed.	(4-)	49 Often feel blue.	(4-)
25 Have excellent ideas.	(5+)	50 Am full of ideas.	(5+)

For + keyed items, the response "Very Inaccurate" is assigned a value of 1, "Moderately Inaccurate" a value of 2, "Neither Inaccurate nor Accurate" a 3, "Moderately Accurate" a 4, and "Very Accurate" a value of 5.

For - keyed items, the response "Very Inaccurate" is assigned a value of 5, "Moderately Inaccurate" a value of 4, "Neither Inaccurate nor Accurate" a 3, "Moderately Accurate" a 2, and "Very Accurate" a value of 1.

Once numbers are assigned for all of the items in the scale, just sum all the values to obtain a total scale score.